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SETTING THE CONDITIONS: THE COMMANDER'S INTEGRATION
OF FIRE SUPPORT IN MANEUVER WARFARE

A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE

by

SAMUEL R. WHITE, JR., MAJ, USA
B.S., United States Military Academy, West Point, NY, 1984

Fort Leavenworth, Kansas
1996

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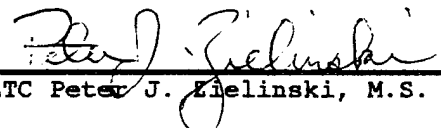
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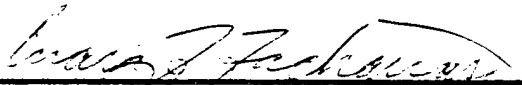
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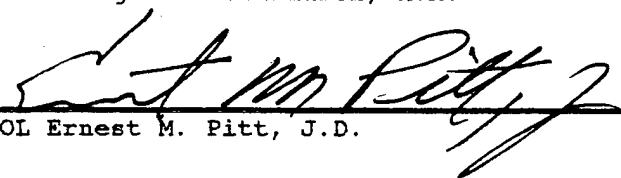
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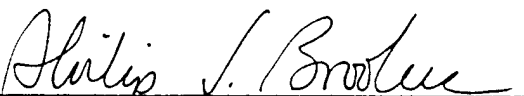

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ABSTRACT

SETTING THE CONDITIONS: THE COMMANDER'S INTEGRATION OF FIRE SUPPORT IN MANEUVER WARFARE by MAJ Samuel R. White, Jr., USA, 161 pages.

This study examines the application of fires and maneuver through the eyes of commanders who have successfully integrated these two dynamics of combat power. To compensate for the lack of a clear measurement of integrated fires and maneuver, an integration model is developed to scrutinize commanders' efforts. This model, termed the integration triad in the study, consists of: fires in depth, detailed yet flexible planning, and focused targeting. The integration triad was used to screen and select three case studies for analysis: The Battle of Bobruisk in 1944; The Battle of Dien Bien Phu in 1954; and a battle at the National Training Center in 1994. Analysis of the commanders in the three cases revealed that they were successful because of their ability to expand their vision and intent beyond what is currently held as doctrine. The current doctrinal notions of decisive points as stepping stones, and a commander's intent focused on the endstate rather than a critical point are challenged within the context of the analysis of the case studies. This study further recommends several changes in doctrinal terms and concepts with regards to commander's intent, effects, and decisive points.

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CHAPTER 1
INTRODUCTION

Background

Maneuver warfare as a military theory has been very much the topic of debate since 1982, when a new and revolutionary (or some say evolutionary) version of FM 100-5, Operations, was published.¹ The document, designed to be the Army's keystone doctrine, shattered the defensive and attritionist based concepts laid down by its predecessor in 1976. Gone was the active defense, with its calculations of force ratios and firepower based tactics; welcome the AirLand Battle, with maneuver based tactics and a refocusing on the principles of war.²

As the force matured under AirLand Battle, the various component branches of the Army were involved in revisiting their structure, subordinate doctrine, training, equipment, and leader and soldier development programs to meet the challenge in the radical shift in doctrinal focus and all of the implications associated with it. The Field Artillery branch, as the proponent for fire support, has evolved with the rest of the force through AirLand Battle and now Army Operations.

Key in the evolution of United States Army doctrine has been the fires and maneuver relationship and the dynamics involved in this relationship. In the 1949 Field Service Regulation (the predecessor of FM 100-5) decreed, "Maneuver itself can produce no decisive results, but

if properly employed it makes decisive results possible through the application of firepower through the principles of the offensive, mass, economy of force, and surprise."³ This clearly attritionist perspective (maneuver applied to set the conditions for firepower, the other "hard" dynamic of combat power) underwent continual revision through the next three versions of the document (now called FM 100-5) in 1954, 1962, and finally in 1968 when maneuver was elevated to an essential element of combat power. The active defense in 1976 emphasized firepower while minimizing the importance of maneuver. The attack, taught Operations "Should be undertaken only if the commanders expects the outcome to result in decisively greater enemy losses than his own, or result in the capture of objective crucial to the outcome of the larger battle."⁴ Maneuver, which had been gaining in relative equality with fires (at least in theory) over the previous 15 years, now took its familiar backseat (as in 1949). It would remain there until 1982 when General Donn A. Starry, et al., produced the 1982 edition of FM 100-5, and with it, AirLand Battle doctrine.

AirLand Battle doctrine elevated maneuver to a position of preeminence. Maneuver was the dynamic of combat; the effect created by maneuver was the first element of combat power. This role is currently filled by leadership, as stated in the current FM 100-5.⁵ The 1986 and 1993 editions of FM 100-5 attempted to balance the relationship between fires and maneuver. The current edition of Operations views firepower and maneuver as inseparable and complementary dynamics of combat. Fires and maneuver are now equally important in maneuver warfare.

The vacillating direction of Army doctrine has done little more than attempt to establish a hierarchy of combat functions, elements of combat power, and stress team work and combined arms.⁶ The broad generalities and failure to define how the various combat functions interrelate is quite evident in the text of the 1993 version of FM 100-

5. In defining firepower (fires), Army doctrine states:

Firepower effects occur at the strategic, operational, and tactical levels, and must be synchronized with other attack systems against the enemy . . . firepower is most effective when combined with the maneuver force.

The field manual continues:

Synchronizing fires with maneuver is critical to the successful prosecution of combat operations. Commanders are responsible for fighting their fire and maneuver assets.⁷

The key theme throughout the manual is the need to synchronize and integrate firepower and maneuver. What is not as obvious is a vision of the endstate of this integration. What should it look, feel, and taste like? In what ways are fires and maneuver complementary, and how are those complementary characteristics best used in maneuver warfare? These are the issues which have caused the break between these two essential elements of combat power. Leaders at all echelons in the Army bemoan the lack of effectiveness of fire support at the Combat Training Centers (CTCs). In spite of improvements in technology, results suggest fire support does not add proportionally to the combined effects of all the systems on the battlefield. Integration simply is not routinely achieved.

The concept of maneuver warfare and the necessity to integrate fires and maneuver did not originate in 1982 with AirLand Battle doctrine. These principles have always existed, yet the majority of commanders, as evidenced by the Center for Army Lessons Learned (CALL)

trends, are unable to achieve a level of integration which capitalizes on synchronization and the complementary nature of fires and maneuver FM 100-5 decrees.

The Research Question

The initial temptation in formulating the research question is to focus on the mistakes made by commanders in fighting fires and maneuver; the output being a list of things not to do and a list of things that should have been done. The question that might be answered with this method is why fires and maneuver are not effectively integrated. This approach does little to facilitate the transition from science to art, as one is still left with many "should dos" (science), but no "how tos" (art). The few commanders who have been able to bridge the gap between the FM 100-5 "warfighting science" and the intuitive "warfighting art" are the key to understanding and addressing the problem, and it is there that the effort should be directed. The research question is not why is it broken, but rather, how can it be fixed? Or, put another way: How can commanders successfully integrate fires and maneuver in maneuver warfare?

The path to the final understanding of this issue obviously contains many twists. This thesis must explore not only the question at hand, but also address questions and concepts that are critical stepping stones on the path. Reflection upon the primary question immediately reveals several concerns that demand attention. The first is the concept of tactical maneuver warfare. The thesis will address this concept to determine definition and bounds for the philosophy of maneuver warfare. Care will be taken to separate and to identify the

differences between maneuver warfare and maneuvering. Maneuver warfare is the model for Army operations; it must be understood as a whole before any relationships between component parts will become clear. The clear articulation of maneuver warfare in definable terms, primarily the fires and maneuver relationship, is critical.

Once the initial subordinate question: What is maneuver warfare?, is answered, the way will then be opened to investigate the next set of logical, embedded questions: What is successful integration of fires and maneuver in maneuver warfare? How are some commanders achieving this success? What changes in Army systems, if any, are necessary to allow all commanders to successfully integrate fires and maneuver. These questions will be answered in the course of this thesis.

Assumptions

It is exceedingly difficult to evaluate the degree of effective integration. The results of fires and maneuver integration efforts by commanders cannot be examined and declared to be 80% integrated; nor can a checklist be applied to the result in an attempt to standardize the evaluation. The process and details of each tactical situation are far too intricate to apply cookie cutter criteria; thus, it is impossible to fairly set an empirical benchmark in evaluating or comparing one commander's integration of fires and maneuver with another's. The lack of objective measurements of integration leaves no choice but to make a subjective assumption that commanders are generally not meeting success in integrating fires and maneuver.

Senior U.S. Army leaders have written about integrated fires and maneuver over the past few years. In 1989, General Joseph Palastra, then commander of Forces Command (FORSCOM) remarked that, "Right now the least successful part of our training has been our forces' appreciation and integration of indirect fire in their maneuver scheme."⁸ By 1991, things had not improved. Colonel Bruce B. G. Clarke, a brigade commander in the First Infantry Division commented,

Many senior leaders are bemoaning the lack of effectiveness of the artillery [fire support] at the National Training Center (NTC). Many very intelligent people are trying to find a purely technical solution to what isn't a technical problem. The problem is maneuver commanders' impatience coupled with an incomplete integration of fires into maneuver plans at every level.⁹

Later that same year Brigadier General Wesley K. Clark, then commander of the National Training Center, when asked how he would rate the maneuver commander's ability to synchronize maneuver and fire support replied,

There's a great deal of work to be done to improve the tactical integration of fires on the battlefield . . . we are far from optimizing the potential of our hardware, organizations, or soldiers.¹⁰

These types of comments continue today. The lack of integration or synchronization of fires and maneuver was the leading comment in the 4th quarter, fiscal year 1995 lessons learned published by the Center for Army Lessons Learned (CALL) from all three CTCs. There is little doubt that a problem exists and has existed for some time.

It is reasonable to assume that all commanders are not ineffective at integrating fires and maneuver. Again, because of the difficulty in measuring the degree of integration by the commander, comparing several different commanders against an objective criteria and determining that one commander has better integrated fires and maneuver

is not reliable. Just as a subjective assumption can be made that some commanders are ineffective at integrating fires and maneuver, a corresponding assumption can be made that some commanders are effective in the same integration.

The second assumption is that Army Operations focus on maneuver warfare rather than attrition warfare. FM 100-5 does not specifically mention maneuver warfare (or theory) as the doctrinal basis for U.S. strategies and tactics. However, its focus on attacking weakness, placing the enemy at a position of disadvantage (ideally as such a disadvantage that he capitulates with little or no fighting), and on firm commitment to a combination of maneuver and firepower fairly well models maneuver theory. Desert Storm, the much lauded culmination of AirLand Battle doctrine, was an exercise in maneuver warfare at the operational level.

Definitions

Maneuver Warfare: Fires and Maneuver

It is impossible to fully explore and define maneuver warfare within the framework formed by the scope and intent of this document. A portion of the thesis, on the other hand, is devoted to discovering the intricacies of maneuver warfare and its impact on the maneuver/fires relationship. The first distinction that is important to understand is the difference between maneuver as an action (verb) and maneuver warfare as a theory (noun).

Webster's New Collegiate Dictionary's first entry for maneuver (as it applies military operations) is, "To make a series of changes in direction and position for a specific purpose."¹¹ This is the maneuver

that most think of. Maneuver in this sense is nearly synonymous with movement. A tank platoon leader may maneuver his platoon from the company tactical assembly area to the attack position, but he is really doing little more than moving. Certainly he will use sound tactical judgment with all required precautions (air guards, interval, and formation), and he will more than likely execute the maneuver utilizing one of several movement techniques (traveling, bounding overwatch, etc.), but there must be no doubt, this maneuver is really movement, regardless of how tactical.

Webster's second definition of maneuver is, "To perform a movement in military or naval tactics in order to secure an advantage."¹² This concept of achieving advantage, or as FM 100-5 puts it, placing the enemy at a position of disadvantage, is the key tenet to understanding maneuver warfare and the way Army Operations are meant to be conducted. It also defines the fundamental relationship between fires and maneuver.

In maneuver warfare, the culmination of the action is not the fires, but the maneuver. The goal of fires is to permit maneuver; the goal of maneuver is not necessarily to fire but to achieve position advantage from which a broad range of options become available. This is the crux of the fires and maneuver relationship and the heart of the definition of maneuver warfare. Fires help create the conditions which will permit maneuver, but not necessarily movement. Maneuver, in turn, will take advantage of these conditions to seize the opportunity to place the enemy at a disadvantage and conversely, to place friendly forces in a position of advantage. Movement may or may not be required

by friendly forces. Fires may force the enemy to displace to a position which, based upon pre-established friendly positions, places the enemy in a position of disadvantage. Thus, fires set the conditions for maneuver (the noun), which was achieved without maneuvering of friendly forces (the verb). The enemy is then defeated in this example by either fire and/or maneuver (the verb). It is useful to think of *fires as condition setting events* (comprised of both a noun and verb) and *maneuver as position setting events* (also having both a noun and verb).

Later chapters of this thesis will explore this very complex notion in great detail. The understanding of fires and maneuver in the context of maneuver warfare is absolutely critical to determining the characteristics of the fires/maneuver relationship. Once this relationship is framed, it is much easier to identify successful commanders and the integration techniques and procedures they use to achieve this relationship.

Fire Support

Fire support is a combat function (battlefield operating system [BOS] at the tactical level), which includes armed aircraft, sea and land based indirect fires, and electronic warfare systems. Fire support is much more than just the hardware that makes up these various systems. The essence of fire support is integrating these systems with maneuver to achieve operational or tactical objectives. Fire support is the function that binds fire resources together into a "package" that supports schemes and intents at various levels. It executes the verb portion of fires (as outlined above) and plans and coordinates the noun portion, the setting of the conditions.

FM 6-20, Fire Support for the AirLand Battle, defines three components of the fire support system: (1) fire support command, control, and coordination (C³) facilities and personnel, (2) target acquisition and battlefield surveillance, and (3) fire support resources. The fire support system, therefore, is the physical headquarters, personnel, sensors, and weapons systems which plan and execute fire support in accordance with doctrinal considerations and the needs of the commander.

Integration and Synchronization

Integration and synchronization are terms that are often misused because they are frequently used interchangeably. FM 100-5 is guilty of carelessly interchanging the terms on a number of occasions. For example, in one portion of the text, the manual states, "Synchronizing fires with maneuver is critical to the successful prosecution of combat operations."¹³ Yet, elsewhere it states: "Leaders integrate fires and maneuver to achieve the commander's concept and destroy the enemy."¹⁴ Some other confusing usages of the terms:

1. *Synchronization* is the arranging of activities in time and space.¹⁵
2. Commanders *synchronize* fire assets with their scheme of maneuver.¹⁶
3. *Synchronization* includes massed effects at the point of decision.¹⁷
4. Fires can be *integrated* with other functions to produce specific massed effects.¹⁸

It necessary to form a distinction between these two terms since they have a significant impact on Army operations in the context of this research as the following paragraphs will describe.

Army doctrine does not define the term integration. Although integration is a logistics characteristic in FM 100-5, and a sustainment imperative in FM 100-10, Combat Service Support, integration is never defined in either manual. Synchronization, on the other hand, is referred to in a variety of ways, though the common thread throughout FM 100-5 is, "Arranging activities in time and space to mass at the decisive point."¹⁹

Synchronization is an endstate and time oriented action. Maneuver, fires, and logistics are planned to be massed, not necessarily positionally, for effects can be massed also. This plan, this method for achieving synchronization, for arriving at the decisive point postured to mass, is integration.

A very useful sentence in FM 100-5 concerns the integration and synchronization relationship: "Integrating the activities of intelligence, logistics, and fire support with maneuver leads to synchronized operations."²⁰ This concept forms the crux of the definition of integration as it related to military operations. Integration is joining the elements of combat power with other combat functions so that at any time each individual piece is functioning in concert with the others and is accomplishing the best designed task which, at any moment in time, is setting a condition for success of the overall operation. Integration is not focused on any particular time and certainly not only on the endstate.

Limitations

The overriding limitation during conduct of the research and synthesis of the results will be the inability to quantify much of this research. In exploring the capability of fire support to support the brigade, the data will be in two general categories: (1) hard number data on weapon systems, numbers of soldiers, and the like. This data is, of course, easy to quantify. In fact, it is already quantified in its raw form, and (2) the "soft" data, relating to doctrine, training, leadership, and so on. This data is not at all easy to quantify and relies somewhat on interpretation, which is in itself a limitation. The answer to the thesis is contained in these two data pools.

An extraordinary contributor to the limitation is the nature of the audience for the thesis. The premise that will be used in preparing the thesis is the need to attempt to quantify the results of the research. This premise is caused by the belief that the audience, mainly military officers with experience in maneuver and fires, will have their own opinions about the research question and will not be at all receptive to additional opinions on doctrine, training, leadership, etc. In this light, the limitation seems more perceived than real. The challenge is overcoming the limitation and meshing hard numbers with soft philosophy to produce a coherent answer.

A limitation briefly covered earlier is an inability to quantify integration and to compare degrees of integration among different commanders and their plans. Currently, it is exceedingly difficult to review two tactical plans and emphatically state that one plan has better integration of fires and maneuver than others. This is

because FM 100-5 defines the endstate, synchronized (integrated) fires and maneuver, but not the tasks or purposes associated with the integration. Quantifying integration in this environment would be comparable to taking two soldiers to the marksmanship range and telling them only that the desired endstate was to knock down as many targets as possible, without telling them the tasks--fire a given weapon from a given position, at a set range--or the purpose--test their ability to engage and hit targets with a given weapon. If one soldier decided to execute the task by firing a pistol at the targets at a range of 300 meters, and the other soldier chose to walk up to the target and knock it down with a kick, the performance of these two soldiers clearly cannot be evaluated as effective or ineffective. Though the endstate was achieved (as many targets as possible were knocked down), how many were acceptable: one, five, twenty?

A similar research dilemma exists when evaluating a commander's efforts to integrate fires and maneuver. Integration (or synchronization) entails only arranging activities to achieve mass (knocking down as many targets as possible). In this endstate, mass is the desired effect, but the question still stands: how much is acceptable: one, five, twenty? A right answer cannot be given because it does not exist. Mass, as it applies to a principle of war, cannot be quantified. It is an effect, not an action or event, so to try to analyze the effectiveness of integration based on the desired outcome of integration (as defined by FM 100-5), is an exercise similar to telling the soldier with the pistol that he did not knock down as many targets as he possibly could.

A goal of this thesis will be to construct a model which defines the relationship between fires and maneuver in maneuver warfare. The model will define the task, purpose, and endstate for successful integration of fires and maneuver. The development of this model will help overcome the limitation imposed by not having a ruler to measure effectiveness in this area. It will still be extremely difficult to compare degrees of integration among commanders because of diverse tactical situations, but actions and procedures each commander took can be compared relative to how those actions facilitated integration as defined in the maneuver warfare fires/maneuver model.

Delimitations

Fire Support is applied at levels from platoon through Echelons above Corps. It is not the intent of the thesis, however, to explore fire support at any level below the maneuver brigade or above the division. The narrowing of the scope to these echelons is made primarily due to necessity caused by limited time. Inclusion of all echelons in the research question would be a significant undertaking, far beyond the capability of this project. The scope was also limited to brigade and division level for a much more subtle reason. The brigade is the ideal starting point because it has special relevancy in today's Army. The brigade is the echelon in which substantial differences in fire support and the maneuver/fires relationship are experienced with regards to doctrine, responsibility, control, and utilization. It is, in effect, the transition echelon. This is true whether viewed from higher to lower, or vice versa. The brigade is the

lowest echelon which doctrinally has a FSCoord (fire support coordinator), but the highest echelon which has an FSO (fire support officer). The brigade is the lowest level which doctrinally employs the formal targeting process, but the highest level without a formal targeting cell. Brigades are the lowest echelon which fight deep, but the only echelon above company level that does not have organic deep reconnaissance assets.

These apparent paradoxes make the brigade the obvious initial echelon for study given the requirement to limit focus due to time constraints. Coincidentally, fire support at maneuver brigade and division level has received particularly troubling reviews from the Combat Training Centers (CTCs), as well as lessons learned during actual operations, lending credence to the decision, if the scope must be limited, to limit it to the brigade and division.

Significance of the Study

When completed, the thesis will be one of the few efforts available which seeks to address a problem which has existed for a number of years, the solution to which has eluded the force for equally as long. It is clear that commanders are having difficulties integrating fires and maneuver into maneuver warfare operations. What is not clear are the procedures to do it correctly. Reams of CTC take-home packets, Center for Army Lessons Learned (CALL) publications, professional journal writings, and unit professional development sessions are focused on solving the problem and have been for years. The force as a whole desires a solution, but as yet one has not been developed. The separate and individual efforts indicated above

routinely focused on one area of fire support and propose a tactic, technique, or procedure (TTP) to correct the deficiency. This study does not seek to undermine the efforts of others who have developed TTP in an attempt to solve existing fire support problems. TTP is vital to the implementation of doctrine, but TTP is valid only if the system is functioning properly. Applying TTP to a dysfunctional system insures only that a particular symptom is cured, yet the disease remains untreated.

This study will use a systematic approach to define how a commander integrates fires and maneuver in combat operations. It will not address the problems and recommend solutions; that is what is being done now, and the results do not bear out a marked improvement. This study will instead focus on the endstate, the ideal model of integrated fires and maneuver, and discover how successful commanders, both past and present, have achieved this endstate.

CHAPTER 2

REVIEW OF LITERATURE

The vast majority of work dealing with the integration of fires and maneuver falls into five broad categories:

1. Military Theory.
2. Fire support articles.
3. Lessons learned data.
4. Army doctrine.
5. Military History.

While Chapter 3 of this thesis will address the details of the research and analysis models, a thumbnail sketch is necessary at this point in order to appreciate how these five categories lend themselves to this work.

The research methodology will follow a three step process in order to determine how commanders should integrate fires and maneuver. First, a model will be developed which will identify the characteristics of integrated fires and maneuver. The model will be based on the theory of the military art, military history, and doctrine. Second, this model will be used to analyze three case studies to determine if the commander in each of the case studies successfully integrated fires and maneuver. The case studies chosen for review are:

1. The Battle of Bobruisk on the eastern front, June 1944.
2. The Battle of Dien Bien Phu, Indochina, May 1954.

3. A brigade defense in sector at the National Training Center, May 1994.

Third, if the commanders in the case studies were successful, conclusions will be drawn as to the reasons for their success. These conclusions will be based on comparing the commanders' processes to the processes described in doctrine and theory.

This is a very general overview of the research method, but it will serve as an outline to focus the literature review. This outline will permit focusing within the five categories that will be examined in this review.

Military Theory

While some military theorists will insist that maneuver warfare came into its own as a theory only within the last 15 years, the concepts of maneuver warfare have existed since men began to wage war. Attacking enemy weakness instead of strength, using maneuver to achieve positions of advantage, and fires to set the conditions for maneuver are not new or revolutionary concepts. What is worthy of note, however, is that in 1982, FM 100-5 was published, and maneuver warfare became Army doctrine.

The phrase "maneuver warfare" is not mentioned in any current doctrinal reference. The term, pushed to a position of prominence in the late 1970s was a rally cry for those opposed to the 1976 publication of Operations, and the opposing concept of attrition warfare they felt it mandated. The concept of maneuver warfare has been the subject of significant intellectual discussion and professional writing lately. It is suddenly perceived as very professionally astute to discuss the

concept, though it has existed for centuries. Colonel James McDonough, one of the authors of the most current (1993) Operations, remarks that,

Attachment to the concept [of maneuver warfare] as if it were the Holy Grail of land warfare advanced unabated into the '90s, distinguishable in some circles by its capitalization as "Maneuver Warfare", an almost mystical beknighting (via English grammar) of an otherwise perfectly common - and useful - concept.²¹

The body of work published by the military theorists is extensive and serves as a superior resource in the quest to understand the relationship between fires and maneuver. These works, along with the doctrinal works later in this chapter, form the basis for development of the fires/maneuver model. This model will contain the characteristics of integrated fires and maneuver in maneuver operations.

Due caution must be exercised, however, in reviewing the works of the overzealous military theorist who is also a maneuverist (and may be part of the circle identified by Colonel McDonough) who tend to overstate the gains achievable by maneuver and understate the contributions lent by fires. These writers, though sincere in their efforts, fail to truly see the relationship between fires and maneuver.

Pre-World War I Writings

The relationship between fires and maneuver is first explored in detail by the nineteenth century French Army Colonel, Charles Ardant du Picq in his book Battle Studies (Etudes sur le combat), published after his death in 1870. Ardant du Picq sets out in his studies to develop an understanding of the dimension of fires on combatant morale. Based largely from personal experience and observations, as well as questionnaires sent to veterans, Ardant du Picq succeeds in producing one of the first in-depth explanations and analyses of fires setting the

conditions for maneuver. Within the scope of Ardant Du Picq's work, he discovered that for a variety of reasons fires served to break the enemy's will to stand formation in battle: increased volume of fire and range of artillery, smoke and confusion within the formation and the fact that individual soldiers lost sight of their companions in the formation. Once the enemy's formation is broken by fires, he is open to the ravages of the pursuit, which Ardant du Picq asserts has historically resulted in the destruction of the fleeing force.

Ardant du Picq's work caused a resurgence in offensive thinking in Europe in the latter half of the nineteenth century. Many of the lessons he taught were misapplied throughout the next forty years, to include World War I. Ardant du Picq's most significant contribution, though, was the concept of fires creating an opportunity for maneuver. Certainly fires and maneuver have been discussed previous to Ardant du Picq, but fires had always been executed as a means to their own end; fires were directed at the enemy to kill or wound him, not to accomplish anything beyond--firing for fires sake. Ardant du Picq saw fires as a means to a greater end. Playing upon the moral dimension of war, fires will cause the enemy to break and run (the means), maneuver will complete the destruction of the disorganized enemy (the end).

Interwar Writings (1919-1939)

Among the first works of this century which definitively organized the philosophies contained in maneuver warfare and accounted for the relationship between fires and maneuver was Captain B. H. Liddell Hart's The Strategy of the Indirect Approach, published in 1929. Sir Liddell Hart, a student of the World War I and disciple and

scholarly companion to J. F. C. Fuller, sought to synthesize the experiences and lessons of World War I into a strategy that capitalized on the offense, avoided enemy strength, relied on penetrations into the enemy's rear, and most importantly for this study, envisioned fires creating opportunities and enemy vulnerabilities which could be attacked by maneuver. Sir Liddell Hart, a devout maneuverist, tends to oversimplify this entire process through The Strategy of the Indirect Approach and in an earlier article "The Man-in-the-Dark Theory of Infantry Tactics and the Expanding Torrent System of Attack" published in the Journal of the Royal United Service Institution in 1921. These are significant works because they outline an actual strategy which combines all arms in the defeat of the enemy. Fires create the opportunity by making the enemy vulnerable, and maneuver attacks this vulnerability.

J. F. C. Fuller in Reformation of War (1923), produced an additional large and well-respected collection of innovative work. Fuller and Liddell Hart collaborated on developing the doctrine of the indirect approach during the 1920s. Abbreviated portions of the most significant items appear in Fuller's 1936 Memoirs of an Unconventional Soldier. A great deal of Fuller's work, and to some extent Liddell Hart as well, deals with organizing and equipping an army to fight the indirect approach. Valuable insight can be gained as Fuller explores roles and missions of fire support (called merely supporting fires in his time).

A study of the interwar period would not be complete without reviewing the works of the great German theorists, many of whom were

practitioners of the military art, who built the German army of post-World War I into a highly disciplined proponent of integration of fires and maneuver. At the forefront in development of German combined arms warfare towards the end of the 1930s was General Heinz Guderian (Achtung, Panzer, 1939). Guderian not only saw the value of mobile warfare but also sought to define the relationship between the arms. Achtung, Panzer is a remarkably detailed look at German tactical doctrine, including a superior description of fires in support of maneuver.

Modern Writings

The modern era (since 1945) has seen a proliferation of writing by military theorists. The body of work generally falls in one of two categories: an anthology of previous military thought interspersed with the author's commentary or new thought on either innovative or established military theory. Both categories are extremely useful to explore, as each contains information relevant to fire/maneuver integration. The single disturbing feature, though, of the modern writings is that they focus less on practice and more on theory. The previous works (the interwar writings especially) were very specific concerning unit organizations, tasks and purposes of events, and general schemes of maneuver and fires for specific missions. Modern writings tend to theorize much of war fighting, a trend that seems to have permeated doctrinal manuals as well. Modern writings also focus extensively on the operational or strategic levels of war and generally seem to forsake the tactical level, again a noticeable trend with doctrinal manuals.

Several relevant works in the field of fires and maneuver have been prepared by Richard E. Simpkin. The most notable of Simpkin's work include: Race to the Swift, Thoughts on Twenty-first Century Warfare (1985), and Deep Battle: The Brainchild of Marshal Tukhachevskii (1987). William S. Lind and Colonel Michael Wyly, USMC, have contributed with their Maneuver Warfare Handbook (1985). These works generally tend to draw upon previously discussed theory and application (Simpkin on Soviet theory, Lind and Wyly on German), but they do present interesting insights into the two applications of warfare. Most useful in support of this research, both works explore concepts associated with the two different applications of maneuver tactics.

Recently, a succession of works has been produced by a relatively small circle of maneuverists who address the problems regarding the application of fires and maneuver. In a foreword to one of the works, Maneuver Warfare - An Anthology, General (Retired) John Galvin says, "It's refreshing to see with what energy those writers have taken up the venerable controversies over maneuver versus firepower."²² This collection contains essays by some of the most ardent modern supporters of maneuver warfare (Richard Hooker, Robert Leonhard, William Lind, Michael Wyly, Michael Meese, and Bruce B. G. Clarke). Other contributors include Daniel Bolger and James McDonough, both of whom are believers in the concept, but oppose the fixing of a name or formalize theory. This anthology is a critical study in the dynamic of maneuver warfare--the tactical foundation for the way the U.S Army is supposed to integrate fires and maneuver. It is supplemented in by Robert Leonhard's work The Art of Maneuver, published in 1991. These two works

offer insight into the mind of the maneuver commander and the tactics he will employ.

Fire Supporters

It is disheartening to note that there is no substantial work to date produced by a fire supporter which explores the integration of maneuver and fires. The bulk of the effort generated by fire supporters is in the form of articles in professional journals or "white papers" circulated among small groups of fire supporters. Most writings are undertaken to identify a particular problem and propose a solution to the particular problem. It is absolutely eye opening to scan an issue from the Field Artillery Journal from 1985, and then another issue from 1995. Contributors are still devising solutions to the same problems identified ten years earlier.²³

Though the pool of available work from fire supporters may assist in developing a solution to the research problem, a problem much more systemic than symptomatic, the real value in this body of effort will be in further defining the problem, and exploring the range of solutions proposed by the authors. The proposed solutions compared against the fundamental requirements of maneuver and fire integration according to maneuver doctrine lead to some interesting conclusions about the focus and mind set of the fire support community.

Army Organizations

The arrival of the information age has caused an enormous volume of data to be available from an ever increasing array of Army organizations. The organizations seem to be divided into two groups; the collectors and the packagers. The collectors are the organizations

who are forward with the force, armed with pencil, doctrinal references, and reams of paper. They attempt to capture all that is being done in the field. Some of these organizations are the Combat Training Centers (CTCs), the Army Research Institute (ARI), and contractors such as the RAND Corporation. The CTCs go a step further and recommend tactics, techniques, and procedures (TTP) and highlight recent trends in performance. The efforts of the collectors are sent to the packagers. Some of these organizations are the Center for Army Lessons Learned (CALL) and the Army Knowledge Network (AKN). Their charter is to collate the information and present it in a form usable to the field. The output is available in a variety of media including computer data bases, quarterly publications, and lessons learned pamphlets. One packager, CTC Warrior Information Network (WIN), located at Fort Leavenworth, Kansas, serves as the repository for all manner of products from the CTCs. The resources range from hard copy or online access to CTC take home packages, to the actual operations orders, overlays, and other planning documents used by units when conducting operations at the CTCs. This is the primary data source for the third case study.

A recent innovation in the area of fire support has been a fire support newsletter published by both the National Training Center (NTC) and the Combined Maneuver Training Center (CMTC). Both of these newsletters cover recent trends observed in the area of both field artillery and fire support, as well as some recommendations to correct deficiencies experienced. Routinely, space is dedicated for several longer features which explore TTP in field artillery and fire support operations.

Army Doctrine

Army doctrine is hierarchical in nature. FM 100-5 serves as the Army's capstone document, with each branch assuming the proponency for the hierarchy of subordinate doctrine within their particular combat function. Within the combat function of fire support, the capstone document is FM 6-20, Fire Support in the AirLand Battle, current edition May 1988. Until October 1989, this was the sole doctrinal document for fire support. The ensuing three years saw the hierarchy more fully developed to now include:

1. FM 6-20-30 Fire Support for Corps and Division Operations October 1989
2. FM 6-20-50 Fire Support For Brigade Operations (Light) January 1990
3. FM 6-20-40 Fire Support For Brigade Operations (Heavy) January 1990
4. FM 6-20-20 Fire Support for Battalion Operations March 1991

In March 1990, FM 6-20-10, The Targeting Process, was published. This document was meant to apply to all levels of fire support, and formalized targeting and described the decide, detect, deliver methodology. This methodology continues to be the fundamental doctrine, orienting fire support from task force through Corps.

A greater understanding of the problem was gained in the this research by tracing the evolution of these various doctrines. In 1977, FM 6-20 was changed from the very parochial Field Artillery Tactics and Techniques to Fire Support for Combined Arms Operations. The packaging of fire support in four hierarchical manuals, together with the continuous changing of titles for FM 6-20, was seen as significant steps in the evolution of fire support doctrine.²⁴

Military History

The enormous number of works which encompass military history can be roughly divided into two broad categories: (1) works dealing primarily with a battle, campaign, or war (history of battles), and (2) Works that are biographical in nature, focusing on one or more leaders or participants in the conflict (history of individuals). It was useful to include works from both categories to garner the perspective of either a leader's impact on integration of fires and maneuver, or the impact of this integration on a battle. This body of work contributed significantly to identifying the actions and techniques commanders have employed to successfully integrate fires and maneuver into maneuver warfare operations.

The first applicable study of fires and maneuver integration begins with the battles of Napoleon. Maneuver warfare had been conducted prior to Napoleon, but battles were not decisive, and fires were too grossly dissimilar from modern definitions to make meaningful comparisons. Napoleon was the first to believe artillery an equal partner with infantry and cavalry in the battle, and thus employed it aggressively to create conditions for exploitation and success for the army. Two thorough works on Napoleon's integration of fires and maneuver are Frank E. Comparato's Age of Great Guns, Cannon Kings and Cannoneers Who Forged the Firepower of Artillery (1965), and Philip J. Haythornthwaite's Napoleon's Military Machine (1988). Both of these books are fine companions to David G. Chandler's The Campaigns of Napoleon (1966), arguably the most definitive work on Napoleon's tactics and battles. Chandler's work is useful in gaining an appreciation for

the tactics Napoleon employed and his deliberate use of artillery to create a condition on the battlefield. Chandler, however, tends to focus on strategy more than tactics, a gap Comparato and Haythornthwaite fill nicely.

The period from the end of the Napoleonic era, to the beginning of the twentieth century was marked by a phenomenal increase in technology, but no corresponding movement forward in tactics. In fact, the conduct of maneuver warfare suffered because of the technology. When Napoleonic maneuver was attempted against the advanced rifles of the middle to late 1800's, the results were devastating, hence the horrendous casualties of the American Civil War. The majority of leaders and thinkers of the late 19th century concluded that offensive maneuver was a thing of the past, and that greater firepower was the key to victory. There were however, several small enclaves of progressive thought which continued to hold fast to the notion of integrated fires and maneuver. Charles Jean Ardant du Picq's Battle Studies: Ancient and Modern Battle (1870), (see the military theorists) wrote of the absolute necessity of combining fires and maneuver, primarily based on his first hand experience in the Austro-Prussian war. This war, as well as the Franco Prussian war three years later, also had a profound reinforcing effect on German tactics. Helmuth von Moltke, the chief the German general staff during these wars, and his successor, Alfred von Schlieffen, believed in the offense and integrating fires and maneuver to achieve *Vernichtungs*, or annihilation of the enemy. Mollke and von Schlieffen saw first hand in the Prussian wars benefit of fires and maneuver. So, while the rest of the world drew it's lessons from the

American Civil war, and began favoring the defense, Prussia/Germany began a 75 year journey to develop tactics that would culminate with a superior fires and maneuver integration model, the *blitzkrieg*. Larry H. Addington's The Blitzkrieg Era and the German Staff, 1935-1941 (1971), is an outstanding volume which traces the development of the tactics of the *blitzkrieg* through World War II. Not only does Addinton address development of tactics, he also addresses the intricacies of the tactics themselves, particularly the methods in which fires and maneuver were integrated into tactical operations.

The period from 1920 through 1945 produced a multitude of literature covering fires and maneuver integration in maneuver warfare. Some of the most in-depth and insightful work came from both Germany and the Soviet Union, perhaps the two nations with the strongest tradition of maneuver warfare at the time. From Germany appears Wilhel von Balck's Development of Tactics (1922), Georg Bruckmuller's The German Artillery in the Break-through Battles of the World War (1922), Heinz Guderian's Armored Forces (1937), and Erwin Rommel's Infantry Attacks (1944). The Soviet Union produced Nicholas Ernest's Self-propelled Artillery in Offensive Combat (1945), Pavel Rotmistrov's writings in the Soviet Voyenno-istoricheskiy zhurnal (VIZh) (Military Historical Journal): "Cooperation of Self-Propelled Artillery with Tanks and Infantry" (1936), and "Tanks - the Decisive Power of the Attack" (1939). These works collectively provide a wealth of insight and constitute an in-depth discussion of execution of fire and maneuver integration.

Several remarkable works were published during the early stages of World War II. These texts, which should be required reading for

practitioners of the military art, tell the tale of German mastery of combining maneuver and fires in victory, and they reveal the lessons learned in this area by those vanquished in defeat. The earliest, Attack, A Study of Blitzkrieg Tactics (1942), by Major F. O. Miksche, is written by an Czechoslovakian artilleryman who fought in Spain against the fascists with the Army of the Spanish Republic from 1937-1939, and then again in the Balkans against Germany in 1939-40. Miksche experienced German maneuver tactics in Spain two years before German's invasion of Poland in 1939. Miksche produced a remarkably detailed study of how the Germans successfully integrated fire support and maneuver. Daniel Vilfroy published similar study later in 1942. Vilfroy, a French officer, summed up France's lessons learned in War in the West: The Battle of France, May-June 1940.

The war on the eastern front saw the clash of two forces who shared operational techniques but who employed very different tactics. The literature covering these operations forms the core of the data for analysis of German or Soviet fires and maneuver. German operations on the eastern front are covered very well by several first hand sources, among them General von Mellenthin's Panzer Battles: A Study of the Employment of Armor in the Second World War (1956), and Guderian's Panzer Leader (1952). Both of these books provide first hand account of plans, tactics, and impressions by two German leaders who fought on the eastern front. Another significant collection of German war experience was completed in 1948 by Liddell Hart. The German Generals Talk is the result of Hart's interviews with many of the German generals who survived the war. While Hart at times uses the interviews as

opportunities to prove the validity of the maneuver theories he proposed before the war, there are meaningful portions of the work. The interviews with Field Marshals Rundstedt and von Kleist are well done, and explain a great deal of the effect of Soviet fires on German troops.

The first substantial works available which included the Soviet accounts of the eastern front came from Great Britain. Richard Simpkin's Deep Battle (1987), and P. H. Vigor's Soviet Blitzkrieg Theory (1983), offer a detailed look at eastern front during World War II, particularly the Belorussian offensive and Operation BAGRATION. In 1986 Chris Bellamy published what is probably the definitive work on Soviet fires and maneuver, The Red God of War. Bellamy's book presents a very detailed description of the integration of fires and maneuver by the Soviet army on the eastern front, to include task organization tables, maps, and fire plans.

The breakup of the Soviet Union and more normalized relations with the west have permitted greater access to Soviet military history. Though much of it is still not translated, historical works are available from the Russian government. Two sources which were absolutely vital in preparation of the first case study were the Voyenno-istoricheskiy zhurnal (VIZh) (Military Historical Journal), and the available works from the Voenizdat, the Russian equivalent to the US Government Printing Office. Extremely in depth studies of the Belorussian campaign and the battle of Bobruisk were acquired through these two sources.

The battle of Dien Bien Phu is very much in the same "literary boat" as the battle of Bobruisk. Because North Vietnam has been closed

for so many years to the west, much of the early work on the battle was taken singularly from the French perspective. The best known of these works, Bernard Fall's Hell in a Very Small Place (1966), actually post dates another lesser known book, The Battle of Dienbienphu (1963), by Jules Roy. Fall draws heavily upon Roy's work, both The Battle of Dienbienphu, as well as his 1965, Street Without Joy. While neither of the two Dien Bien Phu works is entirely objective, Roy presents the most straightforward narration of the action, saving his editorial for the last chapter.

As was the case with the former Soviet Union, the past few years have seen a reduction of barriers to information flow from Vietnam. The most critical work to be released is that of the Viet Minh commander at Dien Bien Phu, General Vo Nguyen Giap. General Giap's exhaustive recollection of the operation, Dien Bien Phu (1964), is most certainly the premier first hand account of the action available. General Giap's work was analyzed in detail in the 1994 thesis, The Generalship of General Henri E. Navarre During the Battle of Dien Bien Phu, by Bruce H. Hupe. Hupe analyzed Giap's actions, and General Navarre's resulting reaction, to determine leadership competency. While the leadership aspect is beyond the scope of this thesis, the action and reaction analysis Hupe conducted was certainly valuable in scrutinizing each commander's actions in the integration of fires and maneuver.

CHAPTER 3

RESEARCH METHODS

This study will use a systematic approach to define how a commander integrates fires and maneuver in maneuver warfare operations. It will not address the problems and recommend solutions; that is what is being done now, and the results do not bear out a marked improvement. This study will instead focus on the end state, the ideal model of integrated fires and maneuver, and discover how successful commanders, both past and present, have achieved this end state.

A goal of this thesis will be to construct a model which defines the relationship between fires and maneuver (see Figure 1).

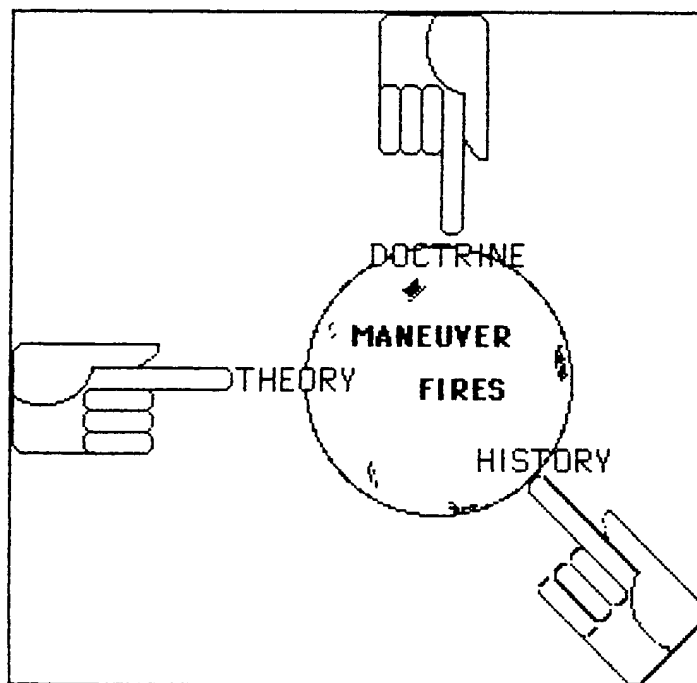


Figure 1. Development of the Integration Model

The model will define the tenets of successful integration of fires and maneuver. The development of this model will help overcome the limitation imposed by not having a ruler to measure effectiveness in this area.

The model will be developed by examining the principles of fires and maneuver given lessons of doctrine, theory, and historical example, all within the context of maneuver warfare and the definition of integration. The goal is not yet to determine how to integrate fires and maneuver, that will come later. This initial goal, the purpose of developing this model, is to get a picture of what integrated fires and maneuver look like. This picture will be in the form of tenets, or maxims on integration of fires and maneuver.

Prelude to Integration

A very necessary step in recognizing integrated fires and maneuver is to first recognize what it is not, and then understand how fires and maneuver evolved through the near term history of war. This prelude, far from just a history lesson in the evolution of artillery, is a valuable exercise in understanding the rise and fall of either fires or maneuver as the dominant arm on the battlefield. This continual struggle between the two arms created a classic paradox: one would achieve dominance over the other, which, in turn, would force the lesser arm to change tactics or equipment to regain the advantage. The paradox was, of course, that at some point both arms had developed sufficiently advanced measures or countermeasures as to render the other ineffective. The struggle between fires and maneuver for dominance had

left neither as supreme. This is the lesson of these next few pages, and must be understood.

The study of fires and maneuver is best begun with the army which has the longest history of a formal fire support arm: Russia. Russian artillery enjoys a tradition of excellence which spans over 600 years. Russian guns were first used to defend Moscow from Tartar invasion in 1382. Though the city eventually fell, the fire from the guns allowed the hopelessly outnumbered defenders to hold the attacking Tartars at bay for four days. This event was remembered in 1982, during the Soviet Artillery's 600th anniversary celebration, as but a premonition of artillery's significant role in the evolution and survival of the Soviet state.²⁵

Throughout the next centuries Russian artillery would continue to provide decisive results for the army, and would continue to occupy a position of great importance in Russian war fighting. During the Napoleonic era, General Sir Robert Wilson, Chief of the British Army, wrote:

The Russian artillery is of the most powerful description. No other army moves with so many guns and with no other army is the artillery in a better state of equipment, training, or tactical development. Certainly no other artillery is more gallantly served.²⁶

The maturation of the Russian artillery continued throughout the remainder of the 19th century at a furious pace. Technological innovations in both artillery and infantry weapons brought about exciting new systems and tactics. The most revolutionary technological development affecting artillery, however, occurred not in the artillery, but the infantry: a conical bullet for the infantryman's rifle.

The role of artillery in the 300 years prior to 1850 was close support of the infantry or cavalry. Artillery was a direct fire weapon, with ammunition optimized for close engagement of massed infantry formations.²⁷ Because of these characteristics, mobility of the artillery was paramount; technological and tactical advances in artillery prior to 1850 occurred infrequently and were concerned almost exclusively with mobility. The lethality of the cannon did not need improved, and tactics of massed cannons had always produced decisive results. Improvements in mobility were undertaken primarily to allow the artillery to match the mobility of the supported arm. Gustavus Adolphus developed mobile battalion guns to support the infantry, the French developed the limber during the thirty years war, Frederick the Great introduced horse artillery to accompany his cavalry, and Napoleon combined all of these innovations in mobility to perfect the art of mobile fires employed in mass at the decisive point. In 1840, mobile artillery could gallop to within several hundred yards of enemy infantry formations and absolutely devastate them with canister fire. The infantry could not effectively return fire because their smoothbore muskets could not range.²⁸ The combination of mobility and a substantial range advantage allowed artillery to become the decisive arm on the battlefield. Dennis Hart Mahan wrote of gunners in 1853:

The artillery has of late years begun to infuse a dash of dare-devil spirit of the cavalier into its ranks. If it has not yet taken to charging literally, it has, on some recent occasions in other armies' service, shown well-considered recklessness of obstacles and dangers, fully borne out by justly deserved success. The artillery now aspires, and with indisputable claims, to the rank of the principle arm. Its decisive effects...are supported by testimony too emphatic to be overlooked.²⁹

But this was about to change dramatically.

With the development of the conical bullet for the infantryman's rifle, Mahan's romantic vision of the bouncing caissons, manned by dashing gunners who put their piece in action to fire between the closing lines of infantry was soon shattered by the withering fire of the rifle. Artillery could no longer race between the lines as Serrarmont had done and remain out of small arms range. The rifle could now effectively fire as far as the cannon. The ranges of the cannon and the rifle were not the same--the cannon could fire much further--but the rifle did not have to fire further than the cannon. It only had to fire to where the cannon was, which was usually on the next ridge. The effective range of a 1870s era rifle was about 500 yards; far enough to drive the artillery back to their own infantry lines.³⁰

The increased range of the rifle had three effects which severely decreased the effectiveness of artillery. First, because artillery was a direct fire weapon: the cannoneers needed line of sight to their target. The infantry could now shoot at and hit most things within their line of sight. The artillery was forced back to less suitable positions, still with line of sight, but much further away and many times too constricted or steep for proper cannon emplacement. The artillery was occupying positions which were too far away to employ canister. Canister was effective only to 350 yards, but the rifle could engage to 500 meters. The gunners were forced to use much less effective munitions, from a greater range. The sighting and aiming devices on cannons were very crude: they consisted of a chalk line and a builder's level. Elevation of the cannon is a function of range, but no reliable method of determining range existed. For example, in 1874

the following was the Russian artillery's approved procedure for estimating range (as adopted from the American army):

With ordinary eyesight masses of troops are distinguishable at sixteen hundred yards, single figure at one thousand yards, movements of the arms and legs at eight hundred yards, faces at three hundred yards, buttons at one hundred and fifty yards, and white of the eyes at thirty yards.³¹

The third effect the increased range of the rifle had was that it caused the infantry disperse and to seek protection. Initially, the infantry sought protection behind fences, trees, and rocks, and gradually developed defensive trench systems. Whichever method was used, the protection the infantry sought from rifle fire also offered protection from the effects of artillery. Even a slight hole in the ground gave protection from the fragmentation caused by shell and case.

The result of these three effects on artillery effectiveness is impressive. Prior to the conical bullet, artillery caused 50 percent of battle casualties. After 1860, in the American Civil War, the Austro-Prussian War, and the Franco-Prussian War, artillery was to cause only 10 percent, with most of the remainder being accounted for by rifles.³²

The development of indirect fires is the single most important innovation in artillery, ever, and it was developed to protect the artillery from infantry fire. In 1882, the principles of indirect fire were first fully described by a Russian Officer, Lieutenant Colonel Karl G. Guk, in a paper entitled, "The Protected Fire of Field Artillery."³³ The Germans quickly took up the idea and developed the first laying instrument, the grandfather of the aiming circle, the *Richtflache*.³⁴ Russians adopted the German instrument and began to experiment with indirect fire in the 1890s. The Japanese also adopted indirect fire,

and both sides used it to great effect during the Russo-Japanese War.

American observers in Manchuria wrote in their official report:

The losses caused on both sides by artillery fire have been decidedly greater than in any previous war. Increased importance of artillery was demonstrated as having a more decisive and preponderating part than ever before in the issue of a battle.³⁵

In 1914 Europe had little idea what the next war would look like. All the armies except for Germany and Russia viewed artillery as an accessory rather than a necessity. Germany's artillery was probably the best prepared for the war. They had completely integrated the artillery innovations of the past fifty years.

The problems each army's artillery faced in 1914 would quickly be solved during the war. When war came, the resolution of these problems would tip the balance towards firepower and away from maneuver. The developments in artillery tactics and technology had set the stage for all armies to rely heavily on artillery as a decisive part of the battle. Artillery was the dominate arm; the infantry had become impotent without artillery support. This led to the stalemate which would characterize World War I. Major Ferdinand Miksche notes:

The fronts settle into immobility as soon as fire-power gains the upper hand over movement. It is impossible to secure a tactical decision by movement; it is only by firepower that such a decision can be gained. The balance in tactics between movement and firepower is disturbed to such an extent that a decision cannot be obtained tactically within a sufficiently short period of time to carry out effectively the general operation desired; a strategic decision becomes impossible to achieve, and a static war becomes a fact.³⁶

The Development of Cooperation Theories

The interwar years (1918-1939) were a period of sensational military thought. The horrible slaughter and four immobile years of World War I were a byproduct of the fires and maneuver paradox. Yet, these events served as the catalyst for a reexamination by military

theorists on the relationship between fires and maneuver. Across the world, never before heard phrases such as "cooperation between the arms" and "combat and attacking teams" were being used. The lessons of the First World War were being analyzed and applied by the armies of the world. Certainly there were different lessons being learned by each nation, but one common thread ran throughout this period: the need to stop treating fires and maneuver as two separate entities and begin integration (or cooperation) of all arms. In 1929 Heinz Guderian saw clearly:

In this year, 1929, I became convinced that tanks working on their own, or solely in conjunction and cooperation with infantry could never achieve decisive importance. Tanks will never be able to product their full effect until artillery and all weapons on *whose support they must inevitably rely practice close cooperation (italics mine)*.³⁷

In Russia, the Red Army emerged from the Civil War yearning to return to its tradition of maneuver based warfare. In the west, numerous theorists and war fighters were developing revolutionary new doctrines (Fuller, Hart, Guderian, et al.). The Russians, too, had their visionaries. The architects of Russian maneuver warfare, Mikhail Tukhachevskii (primarily), Viktor Triandafillov, and Gil Isserson, embraced the indirect approach, but their concept differed from the single and double envelopment of Hart and Guderian in the emphasis they placed on the integration of the holding force and the turning force. In the west, Liddell Hart's indirect approach and Guderian's blitzkrieg relied upon mechanized maneuver forces to provide the both the penetration and exploitation.

The Integration Model

Depth

The point of departure of Tukhachevskii's tactical thinking on integrating fires and maneuver was the all arms battle and the deepening idea.³⁸ The penetration and exploitation would take place simultaneously, by both **fires** and **maneuver**. G Isserson wrote:

We speak in the sense of simultaneous attack of the enemy's entire tactical depth. This idea is the key to Misha's (Tukhachevskii's) thinking on military theory It is possible to conduct a simultaneous attack to neutralize enemy defensive fire systems, his artillery, machine guns, close support tanks, command and control, and to pin down and isolate his reserves.³⁹

Tukhachevskii saw the application of fires and maneuver as one in the same. He described an interchangeability, an exchanging of the functions of the artillery shell with that of the bayonet and bullet. This thought naturally leads to "thinking deeper," and with that the notion of simultaneous attack. In contrast, the German blitzkrieg tactics did not follow the same interchangeability view. The Germans felt that fire support (artillery and dive bombers) could not accomplish the same functions as maneuver, therefore was used only as a supporting arm, though to great effect. Fires in depth supported maneuver in depth. Guderian's vision of deep fires:

Air and artillery bombardment are to be used to pin the enemy down in the rear as our forces attack. These bombardments must take place through the depth of the enemy defenses to allow the motorized and other units pushing through the penetration to exploit tactical success without interference from enemy reserve troops.⁴⁰

Deep operations were conducted by the Germans, but the operations were conducted in sequence, after the penetration and movement to the enemy's rear. Tukhachevskii felt that fire support was capable of independent action, and therefore simultaneous attack throughout the depth of the enemy was possible; fires in depth could be

conducted without maneuver in depth. He stressed that fire support was vitally important to preserve one's freedom of maneuver, and deny it to the enemy.⁴¹ This concept is echoed in FM 100-5: "Most importantly, these operations (operations in depth) prevent the enemy from impacting on friendly actions."⁴²

Regardless of philosophies, the German fires in depth to support maneuver in depth, or the Russian fires in depth to accomplish decisive action on their own, the key concept, and the first maxim in the integration model, is the necessity to employ **FIRES IN DEPTH**.

Depth is, of course, a relative term. Depth to an infantry company has a much different meaning than it has for a Corps. Depth does not necessarily mean deep, so the difference in meaning is not strictly a battlefield geometry issue. Depth, according to FM 100-5 is, "The extension of operations in time, space, resources, and purpose."⁴³ The Russians and Germans saw this as the principle of simultaneity, and its derivative, "maximum contact area."⁴⁴ Depth, then, is not so much about deep, as it is about timing, and *simultaneous engagement of the enemy*. This is the notion of depth that will be part of the integration model (Figure 2).

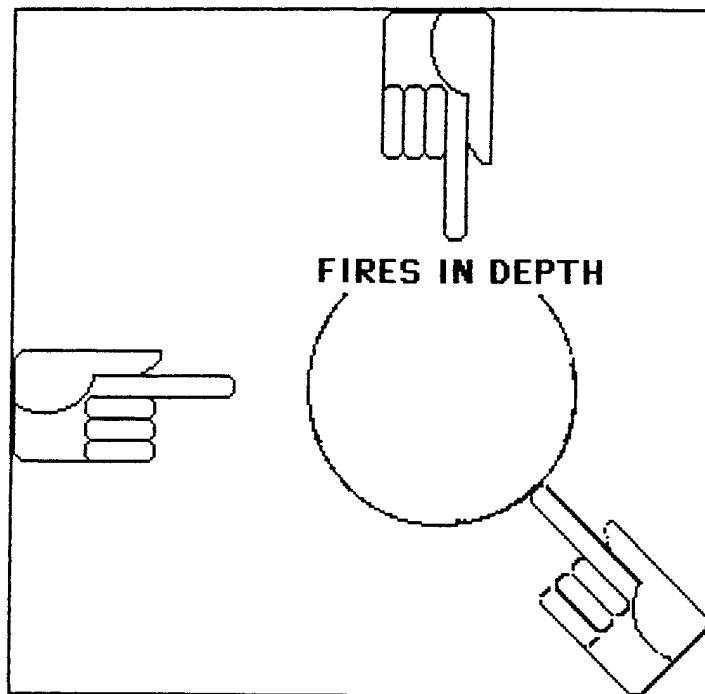


Figure 2. The First Leg in Integration--Fires in Depth

Detailed yet Flexible Planning

To Tukhachevskii, only through detailed planning and flexibility in fire plans was it possible to integrate fires and maneuver. In fact, the 1927 Red Army Field Regulations read:

Artillery will be used in strict conformity with the plan to attack throughout the enemy's depth. The fires will be used to support tank and infantry maneuver, conduct long range counter battery fires, interdict or isolate an enemy unit or area of the battle field; these fires will be preparation, support or accompaniment, and will occur nearly simultaneously. It must not be forgotten that, **above all, proper co-operation [integration] demands thorough planning and flexibility in fires.**⁴⁵

The Germans also recognized planning and flexibility as vital to ensuring integration. Guderian wrote that:

Infantry and tank movement must be painstakingly synchronized with artillery fire so that fire can be opened on foreseen targets (preplanned) at the moment the attack is launched. Modern war makes essential far closer cooperation between the artillery and infantry, and imposes on the artillery the need for much more rapid action.⁴⁶

There is the tendency now to equate detailed planning and thoroughness with centralized control and inflexibility. Maneuverists of the twentieth century have shunned detailed planning and its techniques, preferring instead to leave the execution of battle to soldier initiative.

Major Richard Hooker, in his work "Ten Myths about Maneuver Warfare" attempts to downplay the importance of detailed planning by categorizing deliberate planning processes as only memory aids:

Most leaders use the commander's estimate, the staff planning process and mission analysis to plan an operation. While these are useful and necessary mental checklists, they are at best a planning process - a way to organize one's time and ensure the completion of necessary planning tasks, but not a true thought process. They do not provide a mental framework for the analysis and solution of battlefield problems. They do not represent a theory or philosophy of war fighting, unless we consider the reduction of warfare to target lists, phase lines, and timetables a philosophy.⁴⁷

This line of reasoning completely dismisses the fact that tactical maneuver warfare has always required initiative, but to insure cooperation (integration) it has relied on detailed planning coupled with flexibility. For example, maneuverists place great emphasis on the contribution that the "infiltration tactics" of the German *Sturmabteilungen* of 1918 had as a foundation of their doctrine.⁴⁸

William Lind even writes, "These World War I German tactics, offensive and defensive, remain the basis of modern maneuver warfare tactics."⁴⁹ In his study of German doctrine in that war, Timothy Lupfer notes, "The German doctrine achieved the balance between the demands for precision [detail] to ensure unity of effort and the demands of flexibility for decentralized application."⁵⁰

While the Germans did emphasize small unit initiative to exploit opportunities on the battlefield, they also "emphasized the

coordination of all arms, especially infantry and artillery."⁵¹ In keeping with these techniques developed by Georg Bruchmuller (who also emphasized fires in depth, and whose work influenced Guderian's thinking on operational depth), artillery support was carefully integrated into the assault plan, with each battery of each type of weapon received specific fire missions with specific timetables.⁵² Current US Army doctrine notes,

Adequate, practical planning is essential to the success of any military undertaking. Proper planning permits the detailed and systematic examination of all factors involved in an operation (underline mine). The larger the unit, the greater the need to foresee and plan for long-range future operations.⁵³

Detailed planning, is the best way to assure integration in execution. Usually, the more detailed the plan, the less integration will be held hostage to active command and control once the battle begins.⁵⁴

Veterans of more than one tactical operation are familiar with the old soldiers parable that the plan seldom lasts past the line of departure (LD). Field Marshal Helmuth Graf von Moltke wrote, "Seldom will orders that anticipate far in advance and in detail succeed completely to execution."⁵⁵ What then, asks Richard Hooker, and others, is the point in detailed planning and more importantly, how can detailed planning be vital for the integration of fires and maneuver when the same well laid out and integrated plan will change soon after the operation begins? Major James Morningstar, in an unpublished essay exploring the merits of detailed planning in the conduct of maneuver warfare, concluded that tactical planning must be precise enough to ensure integration throughout the battle yet it must also be flexible

enough to respond to changes or to capitalize on fleeting opportunities to damage the enemy.⁵⁶

In his essay, Morningstar illustrates the balance between detailed planning and flexibility by drawing parallels between an individual rifleman moving on patrol and that rifleman's division staff, planning a movement to contact. The amount of detailed planning that each of the players puts into these similar actions is vastly different. The rifleman conducts very little planning. His actions are based largely on initiative and flexibility because his world changes too quickly and too often to plan for every contingency. The division staff, on the other hand, is much more certain of its environment and therefore able to develop a much more detailed plan. Morningstar concluded that the level of predictability in the planning environment is a measure of the scale of operations in time and space, and that plotting the relationship between planning and initiative (flexibility) against the unit level results in the graph in Figure 3.⁵⁷

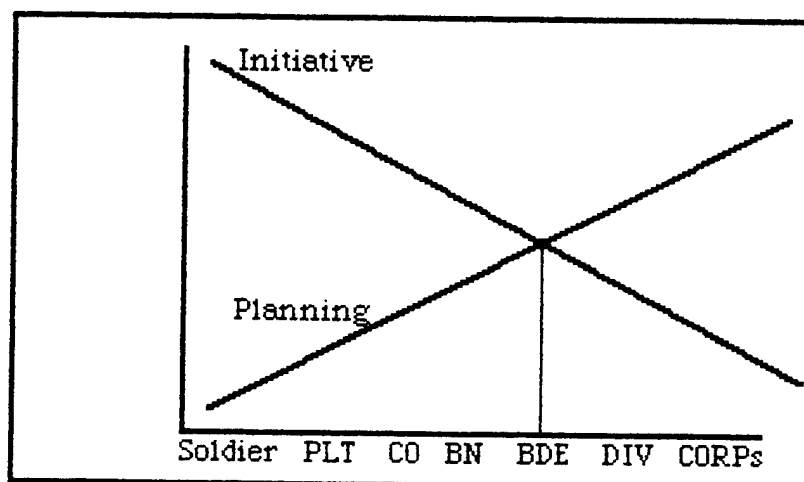


Figure 3. The Relationship Between Planning and Flexibility

In 1940, MAJ F. O. Miksche, in commenting on the differences between German and French artillerymen he observed during the fighting in France, noticed an imbalance in the amount and type of planning each conducted. Miksche, himself an artilleryman, remarked:

The German artillerymen would meticulously plot targets observed before the battle. Artillery fire would be opened at the specific time required, or when the artillery observers saw that enemy units had reached that area. Yet the German artillery officer is permeated by the spirit of the infantry. He is capable of appreciating the needs of the infantry and using his own initiative [flexibility] to provide support when and where it is most urgently needed. The French gunner officer - once so dashing and audacious - has now become a geometrician, and over-theoretical mathematician. He devotes his attention far more to the technical aspects of planning artillery than to the tactical needs of the infantry, of which he has little understanding.⁵⁸

Clearly, a balance must be met between detailed planning and allowing flexibility in the plan. The amount of flexibility allowed may be based, as Morningstar contends, on the degree of uncertainty in the operation. FM 100-5 recognizes that commanders continually balance the competing risks of too much of one, and not enough of the other.⁵⁹ So critical is this balance, and so imperative is **DETAILED YET FLEXIBLE PLANNING**, this will be the second tenet of integration (Figure 4).

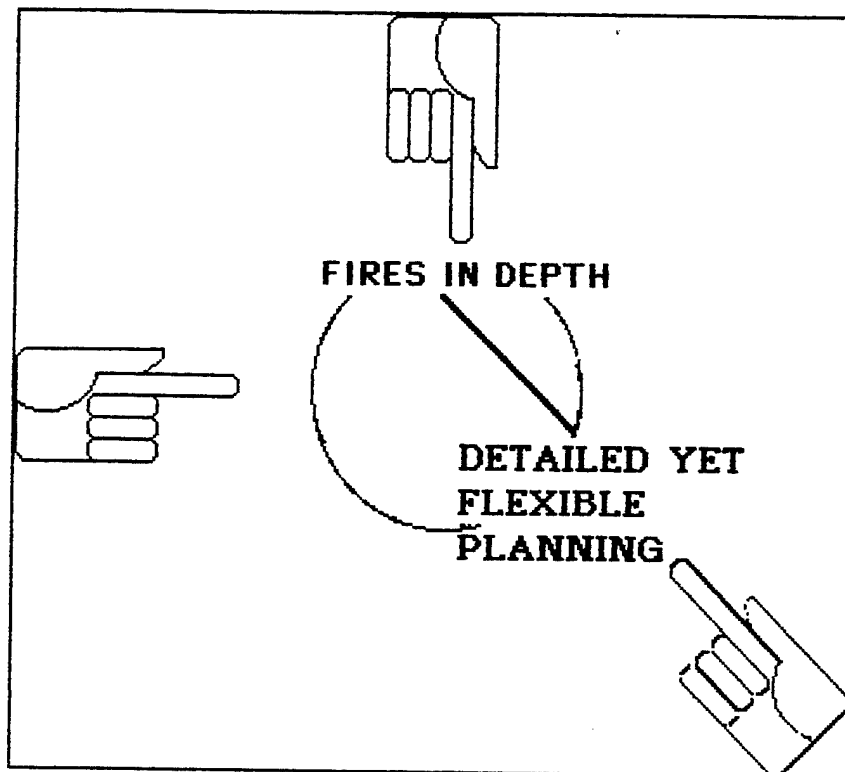


Figure 4. The Second Leg--Detailed yet Flexible Planning

Focused Targeting

It is useful at this point, before considering the third and final tenet of the integration triad, to revisit the definitions of maneuver warfare and integration (as stated in chapter 1). Maneuver warfare is, simply stated, seizing the opportunity to place the enemy at a disadvantage, and conversely, place friendly forces in a position of advantage. James Morningstar describes how that opportunity is seized:

It [maneuver warfare] advocates an attack against weakness not strength by flowing like water, **seeking gaps** and avoiding surfaces. The lead elements pull the attack toward the gap; commanders do not push the attack on a preordained route. Tactics rely on the decisions of soldiers at the front to **exploit opportunities** that appear amid the chaos of battle. Units **orient all efforts** towards defeat of the enemy.⁶⁰

Integration is the process of orienting all the efforts of the unit which Morningstar wrote of. It involves joining the elements of

combat power (maneuver, firepower, protection, and leadership) with other combat functions, so that at any time each individual piece is functioning in concert with the others and is accomplishing the best designed task which, at any moment in time, is setting a condition for success of the overall operation. This determination of a piece's "best designed task" for the particular moment in time is the foundation of the third tenet of integration.

Tukhachevskii wrote in the 1936 Soviet Field Service

Regulations, PU-36:

The employment artillery in battle should be based on analysis of its characteristics and strengths and a careful determination of *what needs to be done at the time . . . only then will the two arms [infantry and artillery] be working under conditions affording the best possible cooperation (italics mine).*⁶¹

The concept of what needs to be done at the time was a relatively new idea during revolution in military thought in Tukhachevskii's time. In times past, in attrition warfare, artillery had fired for firing's sake. Most often, the targets that were being fired at had little to do with the maneuver plan. The artillery had become, as Miksche pointed out, consumed with the details of firing and not with the details of targeting.⁶²

General von Thoma, perhaps the second most famous panzer theorist and commander next to Guderian, felt that successful integration of fires and maneuver would be possible only by selective firings, "focused in support of the point of penetration."⁶³ In 1933, Guderian himself said that broad indiscriminate attacks by divisions on 40 kilometer fronts were a thing of the past. Fires and attacks would now be focused on fronts one tenth this size. The transition from

static, attritionist warfare to maneuver warfare clearly caused a shift from broad fronts to battle on narrow fronts.

The shift to narrow fronts brings about a requirement for careful target decision processes. A narrow front attack demands surprise by the attacker (or counterattacker). If surprise is not gained, the attack will not go against enemy weakness, but instead his strength, as the enemy moves forces freely from other area to meet the attack. Any fires must be short and well placed. Miksche comments in 1940 that,

The barrages of the last war are now merely interesting phenomena of the past . . . the artillery no longer enjoys the luxury of bombardment over a large area. It now has to deal with individual targets which must be accurately determined and plotted.⁶⁴

The modern equivalent of what these men are postulating is the U.S. Army's concept of targeting. FM 6-20-10, The Targeting Process defines targeting as the process of identifying enemy targets for possible engagement, determining the appropriate attack system, and planning the effects that are required on the enemy by the attack.⁶⁵ Tukhachevskii's added emphasis on the targeting process is the concept of *what needs to be done at the time*. In other words, a key to integration of fires and maneuver, and the third and final tenet in the integration model, is the requirement for **FOCUSED TARGETING**.

The Integration Triad

The inclusion of the final tenet, **FOCUSED TARGETING**, in the integration model completes the integration model proposed earlier (Figure 5).

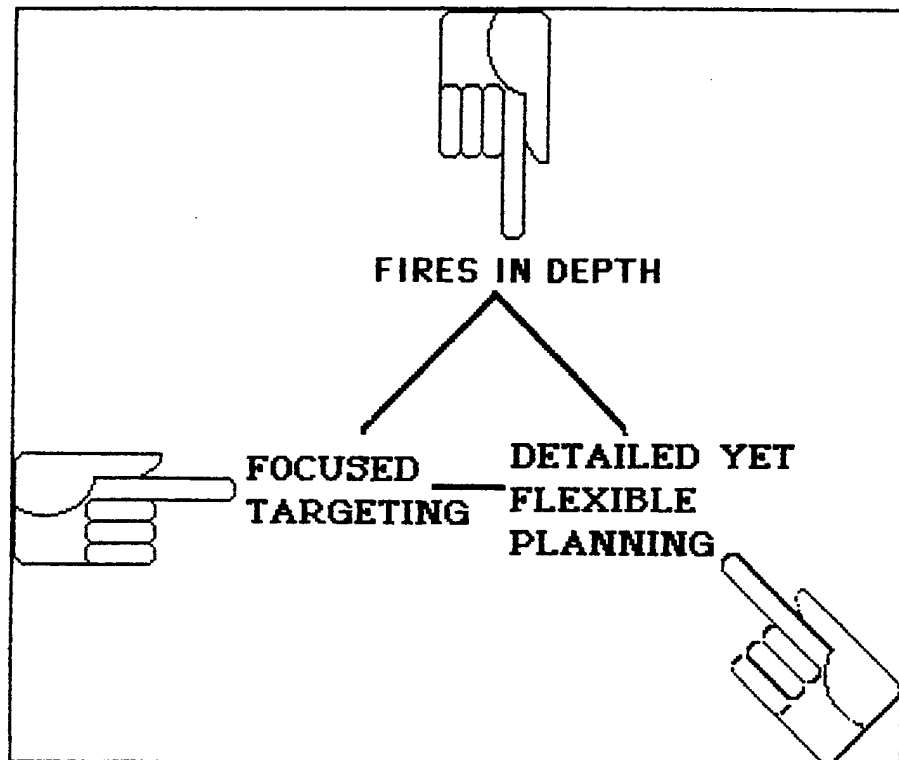


Figure 5. The Integration Triad

The complete model consists of:

1. **FIRES IN DEPTH**
2. **DETAILED YET FLEXIBLE PLANNING**
3. **FOCUSED TARGETING.**

Through fairly detailed analysis of maneuver warfare doctrine and thought spanning the past eighty years, the analysis conducted in this past chapter has established these three tenets as indispensable linkages in the integration of fires and maneuver. They are the "integration triad."

The integration triad will prove very useful as a benchmark by which to measure each commander in the selection of the three upcoming case studies. Commanders who successfully incorporate the three linkages of the triad within the parameters of maneuver warfare are

considered to have successfully integrated fires and maneuver, and are included in this study. This deliberate process highlights why it is so vital to understand the concepts that define integration of fires and maneuver (and the definition of integration), as well as the concepts of maneuver warfare itself.

The Case Studies

The second phase of the research method involves measuring a variety of historical battles against the integration triad in the hopes of finding three historical case studies in which the commander successfully integrated fires and maneuver (as measured by the triad). The end result of examining the case studies, and the research as a whole, will be to reveal the methodology these commanders used to achieve the integration of fires and maneuver. The triad--depth, planning, flexibility, and targeting--is the science of integration. The ultimate goal of this research is discover the art of integration as applied by commanders.

Three case studies will be analyzed which cover a broad range of conditions and situations. In selecting the case studies for analysis, a deliberate effort was made to seek as diverse a sampling as possible.

Few restrictions were placed on the search, but there were restrictions none the less. They were:

1. All case studies must be post World War I. Though there certainly were commanders who masterfully integrated fires and maneuver prior to World War I (Napoleon for example), the parallels to modern war fighting are somewhat strained. Artillery was still largely direct

fire, airplanes had yet to make their presence felt, and the organization of armies was very different from today.

2. Every effort must be made to include both mechanized and dismounted operations. If the integration triad is valid, it must be applied against the full range of forces (dismounted infantry forces conduct maneuver warfare also).

3. Any nation's army cannot be involved in more than one case. This restriction sought to exclude excessive national influence on the final outcome. The end result of this study is to determine the "art" commanders apply to integrate fires and maneuver. Too much influence in the study by commanders of any one nation might tend to introduce into the results the influence of that particular nation (schooling, training, etc), as opposed to the individual commander's wielding of the art of command.

4. Only cases involving brigades (regiments) or divisions will be considered (see chapter 1). These two units compare favorably in both tactics and science. Any further spread (battalions or Corps) would run the risk of damaging the conclusions drawn from the analysis of the case studies because of the enormous disparity of actions of a battalion commander and those of a Corps commander. The triad is not being dismissed as a tool for examining integration at the battalion or corps level. On the contrary, it certainly is valid. What may not be valid, however, is the inference that the art of the battalion and corps commanders applied in using the three linkages was the same. Hence, it is best to leave all echelons less brigade and division to further study.

Applying the four restrictions to all historical battles involving the application maneuver warfare yields hundreds of cases for examination. The selection of three for this study boiled down to several less specific criteria (in no particular order): (1) the use of both fires and maneuver in the battle, (2) the diversity of the cases, (3) the availability of research material, and (4) the potential of each case to reveal important lessons about integration of fires and maneuver. Could other cases have been chosen? Yes. Do these three cases adequately fill the research requirement? Yes again.

The three cases chosen for study are:

1. The attack across the Berezina River by the Soviet 14th Rifle Division during the battle of Bobruisk, June 23 to Jun 28, 1944.
2. The attack by the Vietminh on the French garrison at Dien Bien Phu, March 13 to May 7, 1954.
3. A defense by a mechanized brigade against an OPFOR motorized rifle regimental attack at the National Training Center (NTC), May 18, 1994.

A note is necessary to briefly explain the inclusion of Dien Bien Phu as a case study. Those familiar with the Viet Minh operation are aware that the total Viet Minh force at Dien Bien Phu approached fifty thousand men and five divisions, which would seem to violate criteria number four: inclusion of only brigade or division operations. While the Viet Minh did have five divisions at Dien Bien Phu for the fifty-four day operation, the case study will focus on the initial week of the battle, when the Viet Minh fought a series of division and regimental actions against the French.

The coming chapter will examine these three case studies, comparing each of them to the integration triad to determine if the commander successfully integrated fires and maneuver. If he was successful, the next step in the analysis of the cases is to discover the techniques, the art, the commanders applied to ensure the integration. This is the key step in the analysis. Remember, the integration triad was developed **strictly from an examination of doctrine and theory**; these are linkages that *should* work to integrate fires and maneuver. It is the commander's application of the military art that gives the triad life and makes it work. As LTC Craig Zachariasen said, "The only thing that matters is what happens in the end."⁶⁶

CHAPTER 4

CASE STUDY 1: THE BATTLE OF BOBRUISK

Background

Tactical Situation

In the spring and early summer of 1944, the German Army in Poland was preparing for what it knew would be a massive onslaught by the Russian Army. All hopes for a German victory in the east had faded with the disastrous campaigns of 1942, and the Germans hung on hoping for a stalemate at best. Napoleon's great leader, General Foy, wrote in his memoirs that Napoleon's soldiers marched to Waterloo "without fear and without hope." This was the sentiment of most German officers at the onset of the great Russian counteroffensive in 1944.⁶⁷

By April of 1944, the series of offensives and counteroffensives that characterized the eastern front over the past three years had left the Red Army postured to begin the final push that would "liberate" White Russia and take the war to the borders of Germany. The operation, code named BAGRATION, was planned to coincide with the Allied invasion at Normandy (though Stalin eventually launched the counteroffensive on June 22, 1944, the third anniversary of the German invasion of Russia).⁶⁸

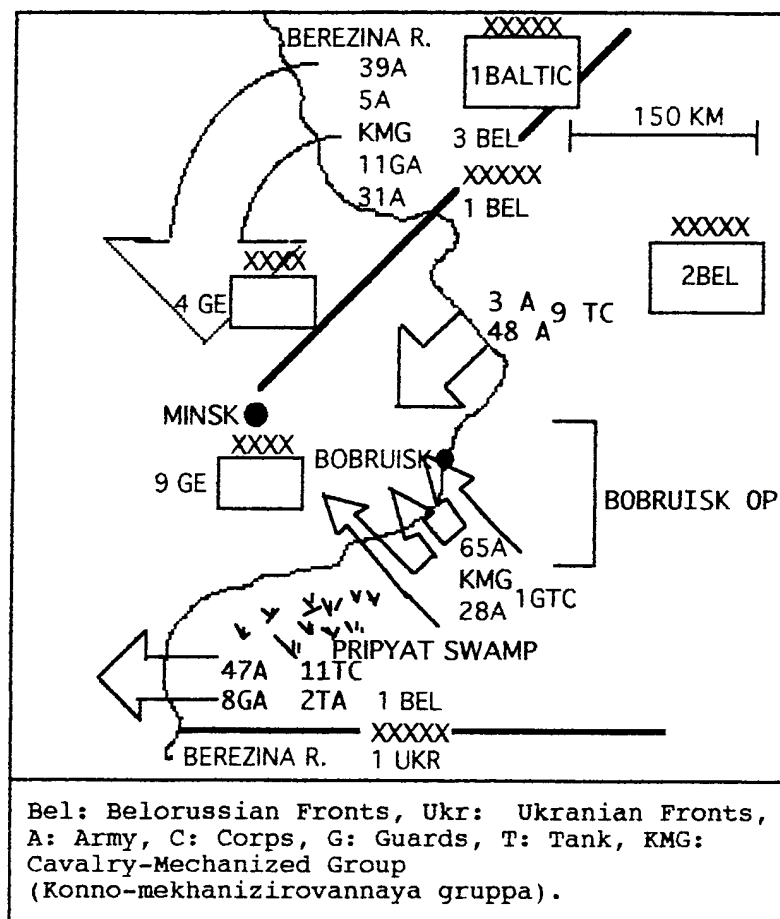


Figure 6. The Belorussian Strategic Offensive Operation

Source: Unit locations from Chris Bellamy, Red God of War (New York: Brassey's Defence Publishers, 1986), 54. Map drawn by author.

Operation BAGRATION's purpose was the envelopment of the German Army Group Center in White Russia by two attacking Soviet forces: a northern force comprised of two fronts and commanded by Marshal Alexander Vasilevsky, and a southern force, also containing two fronts, commanded by Marshal Georgi Zhukov. The battle for Bobruisk was the first phase of the southern force's mission, and would form the penetration that would allow Zhukov to pursue and envelop German forces

from the south (Figure 6). The city of Bobruisk sits astride important crossing sites on the Berezina River, and was key to Zhukov's success in the operation (Figure 7).

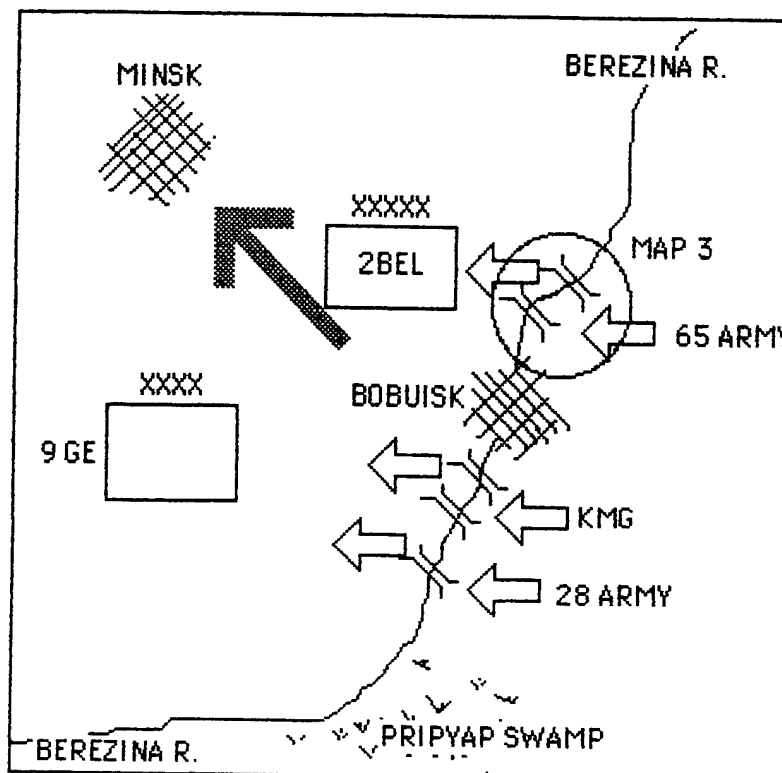


Figure 7. The 1st Belorussian Army Attack

Source: Map drawn by author.

These crossing sites would be vital in the rapid advance of a Soviet second echelon front (2nd Belorussian Front) across the river and to the west towards Minsk. Though other crossings are available further to the south, the marshy terrain of the Pripyat Swamp relegated the southern axis to the role of economy of force. Bobruisk was Zhukov's main effort, and against it he would commit the bulk of the forces of the 1st Belorussian Front (commanded by Marshal Viktor Rokossovski) to create

the penetration, while the forces of the 2nd Belorussian Front waited to exploit towards Minsk. The crossings had to be taken at all costs.

The 14th Rifle Division was but one division among the 166 assembled by the Soviets for Operation BAGRATION. The 14th Rifle Division, part of the 65th Army, was given the mission to seize one of the key crossing sites south of Bobruisk to allow the First Guards Tank Corps to pass to the west. Figure 8 reflects the composition of the 14th Division

<i>Rifle Regiments</i>
<u>242d Rifle Regiment (6 Companies)</u>
242d Close Support Group (PPG)
1/199 Arty Reg't (8 X 76mm, 4 X 122 mm)
16th Arty Reg't (24 X 76mm, 12 X 122 mm)
<u>244th Rifle Regiment (6 Companies)</u>
244th PPG
2 and 3/199 Arty Reg't (16X76mm, 8 X 122mm)
345th Arty Reg't (24 X 76mm, 12 X 122 mm)
15th Hvy Arty Reg't (24 X 122 mm)
<u>246th Rifle Regiment (6 Companies)</u>
246th PPG
1/167 Arty Reg't (8 X 76mm, 4 X 122 mm)
1991 Lt Arty Reg't (24 X 76mm gun)
<i>Division Support Group (DIVARTY)</i>
998 Mortar Bde (80 X 120mm mortar)
851 Arty Reg't (28 X 122mm How)
1176 Arty Reg't (28 X 122mm How)

Figure 8. Composition of the Soviet 14th Rifle Division

Source: Colonel-General V. M. Mikhalkin, "The Military Employment of Artillery in the Belorussian Operation," Voyenno-istoricheskiy zhurnal (VIZh) (Military Historical Journal), (Jun 84): 25-33.

Opposing the division on the west side of the Rerezina was a Regiment (nine companies) of German infantry, supported by three battalions of 105 millimeter towed artillery (Figure 9). The German defenses were arrayed in three echelons: a four company battalion as

the first, a two company battalion as the second, and a two company battalion as the third; a rifle company formed the reserve.

Planning

The 14th Division Commander General Mitka Biryokov developed a tactical plan not at all different from current breaching and river crossing methodology (Figure 9). He intended to establish the 244 Rifle Regiment as a supporting force on the east side of the river as the 242d Rifle Regiment attacked to secure a crossing site across the river. When the 242d had secured the far side of the river the 246th Rifle Regiment would attack across the river to expand the crossing. The 244th, as the supporting force, would direct the fires of its own close support artillery group (PPG), as well as preparation fires by the Division Support Group.

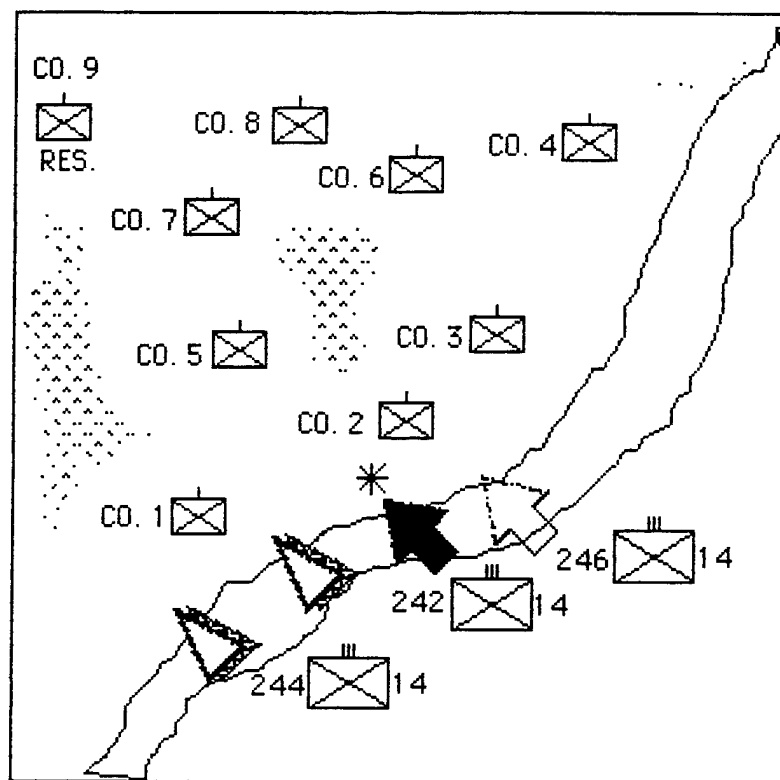


Figure 9. General Biryokov's Plan

Source: Map drawn by author.

Biryokov lacked overwhelming force ratios in maneuver forces (three regiments [each with only six companies] conducting a river crossing against a nine company German regiment). He did, however, have twenty-one artillery battalions versus the Germans' three. The key, surmised Biryokov, was to gain overwhelming advantage at the decisive point. Though the aggregate maneuver force ratio across the battlefield was 2:1, Biryokov wanted overwhelming ratios at a single point on the battlefield, at a single point in time. He determined this point to the far side bridgehead as the 242d arrived at the far shore (see Figure 9). Biryokov wanted a situation in which the 242d rifle regiment was engaged

with only one German company (or a 6:1 force ratio) as it secured the far shore.

Biryokov felt that surprise was his key to achieving these force ratios, and that surprise could be gained by combining three actions:

1. By concealing the division's movements
2. By a good choice of place for the blow to fall
3. By the speed and energy with which the blow itself is delivered.⁶⁹

General Biryokov was extremely concerned about the cooperation (again, integration) between the artillery and the other arms during the attack. His concerns were two fold. First, the coordination and the timing of the fires together with the assault by the 242d across the river, and second, the choice of targets to be fired (targeting).⁷⁰ Biryokov's first concern involved orchestration. If the fires on the enemy were lifted too early, the Germans would be able to recover and repel the attack easily. If the fires were lifted late, the attack would stall behind its own artillery fires. In order to guarantee the level of integration necessary for this operation, commanders at all levels were briefed together and rehearsed using detailed sand-models on which they worked out precise courses of action, signals, and timing.⁷¹

Biryokov's second concern touched the heart of this problem. Though he had overwhelming artillery forces, he could not afford to fire indiscriminately, else he would risk the loss of surprise. Biryokov knew, of course, that no matter how much artillery is deployed, it is

ineffective if poorly directed. He had to therefore choose his targets wisely.

Execution

The 242d Rifle Regiment made preparations for a river crossing, staging men and equipment in front of the German Company 2. The artillery preparation of the German positions began shortly before sunrise on June 23, 1944. The 244d Rifle Regiment, as the supporting force, directed a fifteen minute heavy artillery preparation against the German infantry Companies 2, 4, and the reserve Company 9 (see Figure 10).

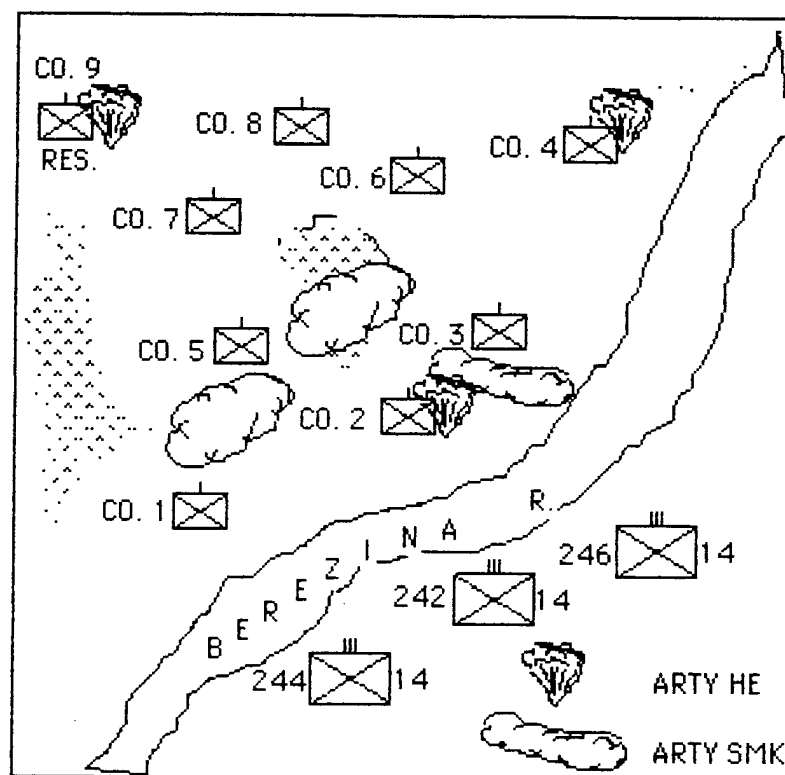


Figure 10. The Russian Preparation on German Positions
Source: Map drawn by author.

At the same time, artillery smoke began falling on Company 3 and in front of Company 5. The remainder of the German forces were not engaged at all. The effect was catastrophic for the Germans.

Companies 2 and 4 began suffering heavy casualties almost immediately. The combined weight of the 244d and 242d PPGs, as well as the Division Support Group smashed the two companies badly. Machine gun positions were completely destroyed, and seventy percent of the deep timber and earth dugouts were destroyed.⁷² At one point during the preparation, 108 guns were concentrated on one German infantry platoon in Company 2. After the Russian guns fired 1,150 shells in five minutes, the platoon disappeared.⁷³

The situation in the reserve company (Company 9) was little better. The company was lightly dug-in and the thinly protected infantrymen were horribly mauled in the first few minutes, suffering over 60 percent casualties; the defending German regiment had lost its reserve.

In Companies 3 and 5, confusion was wide spread. Company 3, by now completely engulfed in the artillery delivered smoke the Russians were firing on it, pulled in company outposts and forward platoons because of the commander's fear of fratricide in the limited visibility. The company was now completely isolated. Company 5 was also isolated by the wooded terrain to its north and was unable to see the first echelon defenses because of the smoke in front of it. The German regimental commander, overwhelmed by the completeness of the barrage, felt positive the Soviet assault would come in the center because of concentrated artillery preparation there. As a preemptive measure, and unaware of

the magnitude of focused artillery fires on the center, he ordered Company 5 to move to Company 3's position to reinforce the center. Company 5, unable to see Company 3 because of the artillery delivered smoke screen, charged through the smoke and into the artillery fires, becoming pinned down almost immediately. An alert battalion commander from the 244d Rifle Regiment saw the soldiers from Company 5 repositioning through the smoke and informed Biryokov that the trap was sprung; the 242d Rifle Regiment began its assault across the river as the artillery began a preparation of Company 1, Biryokov's true point of penetration. Thus, as the assault began, the German regiment was completely ill-positioned for an assault on its southern flank (Figure 11).

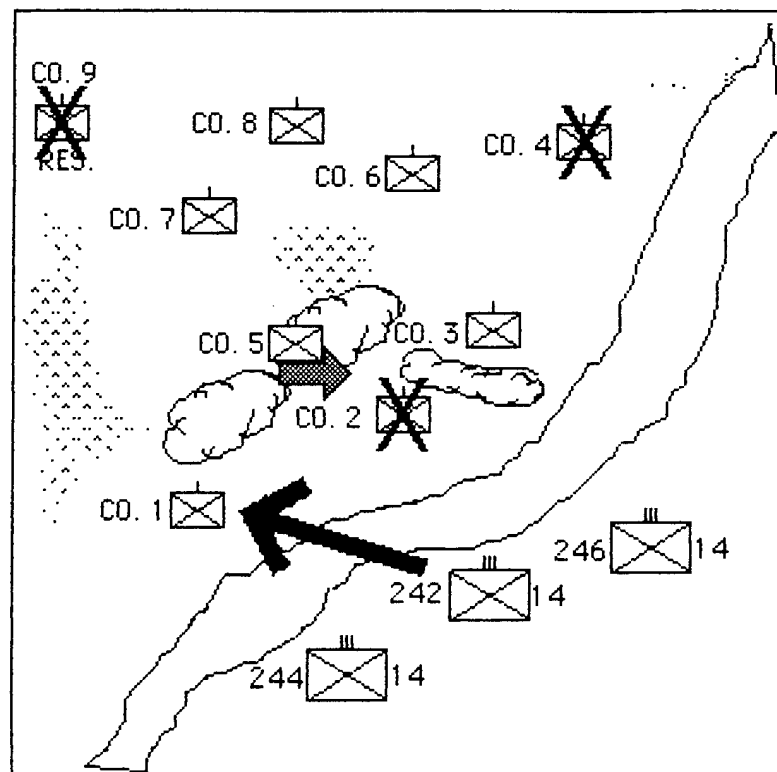


Figure 11. Situation as the 242nd Rifle Regiment Begins Its Assault

A description of the ensuing assault is academic. The 242d Rifle Regiment, massed on the hopelessly outmanned Company 1, easily secured the crossing sites. The 246th Rifle Regiment, the assault and exploitation regiment, completely routed the remainder of the defending German Regiment. On the operational level, BAGRATION achieved immediate and crushing success all along the front. Both the German Ninth and Fourth Armies (Army Group Center) were largely destroyed. In less than two weeks, the Germans had lost twenty-eight divisions and 300,000 men in a disaster far greater than Stalingrad.⁷⁴

Analysis

The 14th Rifle Division's action at Bobruisk is a example of opposed river crossing operations. Fires, maneuver, overwatch, support, suppression, and assault all combined in a near textbook operation. General Biryokov accomplished what Guderian and Patton had been unable to: force a river crossing against a prepared defender.⁷⁵

The immediate temptation is to point to the overwhelming superiority in Soviet artillery as the catalyst for the German defeat. The Soviet's 224 guns versus the 36 for the Germans seems a indicator where the fight was won; it would seem have been won on the tally sheet. The side with the most guns achieved victory. Little integration of fires and maneuver would appear to be necessary by General Biryokov; firepower reigns supreme and maneuver is only used to get to the objective. Certainly this is not the case at Bobruisk.

Superiority of fires might have been the instrument of victory had this been a siege, and the Russians stood off and beat the Germans into submission, but they did not. The preparation lasted only fifteen

minutes. Besides, firepower alone has had dubious success when employed as an end in itself. In 1942, the Germans laid siege to Leningrad with absolute firepower superiority. They massed nine thousand guns outside the city and fired four thousand tons of ammunition per day into the city for almost six months.⁷⁶ The city never fell. The greatest lesson of all, World War I, was a four year exercise in fruitless siege warfare.

General Biryokov understood that integration of his fires and maneuver was vital. His success at accomplishing this integration will be measured by the integration triad.

Fires in Depth

General Biryokov, in planning his attack, surely understood the necessity of fires in depth to support the 242 Regiment's attack. The defending German regiment enjoyed interior lines as well as a mobility advantage over the attacking Soviet division.⁷⁷ An attack at one point in the German defense would be quickly defeated by reinforcements from unengaged areas of the defense. If the Russians attempted an attack on a broad front, they would be unable to achieve sufficient forces at any one point, and would be defeated in detail. The only solution available to Biryokov was to employ fires throughout the depth to engage of a majority of the German force, yet still mass forces at a single point.

The dimensions of the battlefield for 14th Division's attack was about four kilometers wide by eight kilometers deep, seemingly very narrow by today's standards, but wide by Soviet doctrine (Figure 12).⁷⁸

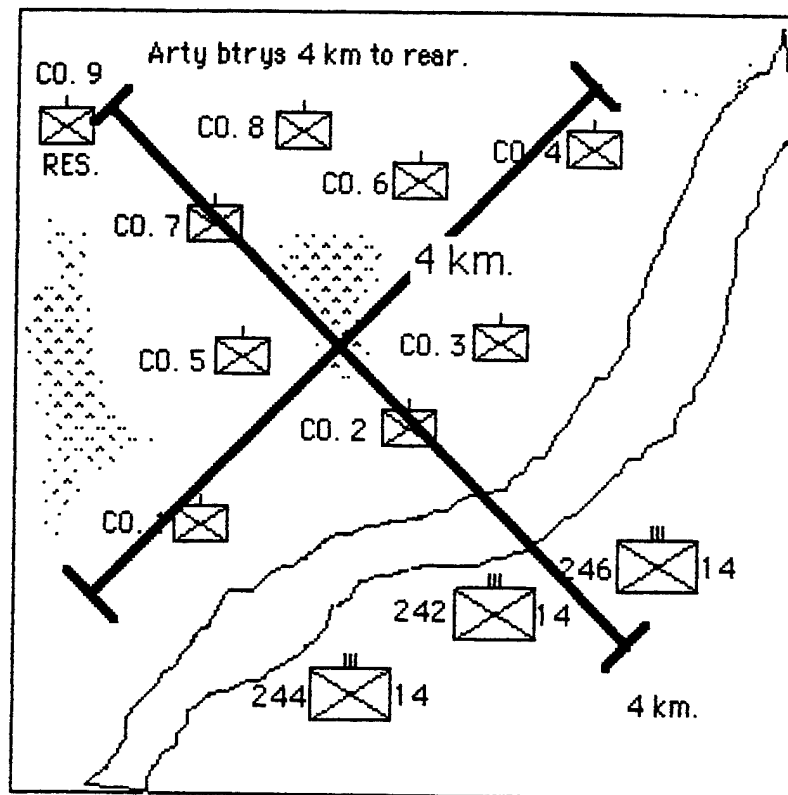


Figure 12. Depth of 14th Division's Zone of Attack

Source: Map drawn by author.

Eight kilometers from the Soviet line of departure to the German regiment's artillery (the deepest positioned force) seems hardly to allow for the concept of deep, yet that is precisely the difference between deep and depth. The deepest fires planned by Biryokov were only four kilometers from the line of departure (on Company 9), yet the fifteen minute preparatory fires designed by Biryokov and his staff involved firing massed artillery on one-third of the German forces (Companies 2, 4, and 9), to ultimately achieve effects on eight-ninths of the force (Figure 13).

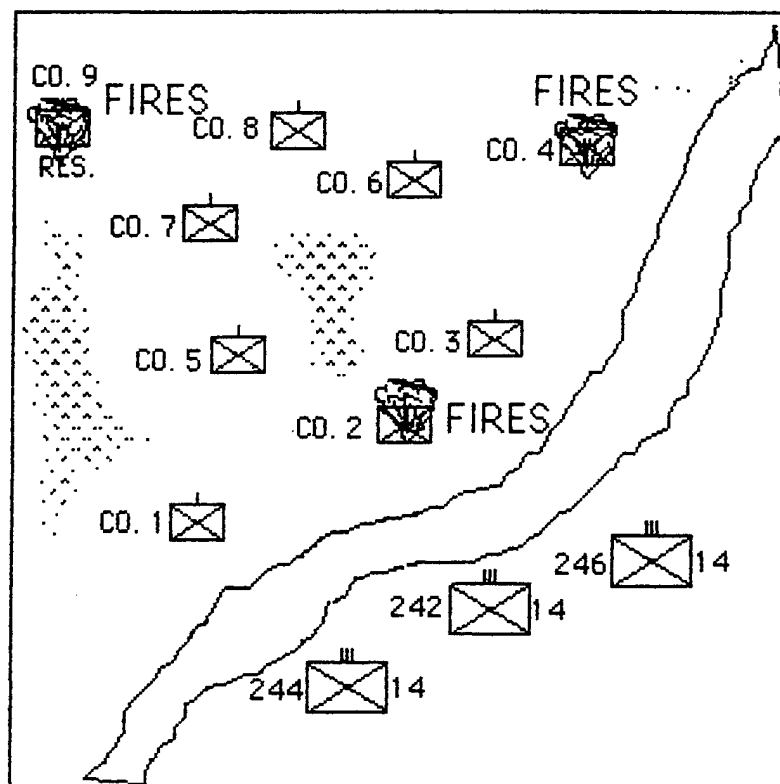


Figure 13. Fires on One-Third of the German Regiment

Source: Map drawn by author.

Prior to the start of the bombardment, the 242d Rifle Regiment made fording preparations opposite the German center. These preparations, along with the heavy fires on Companies 2 and 4, gave the impression that the Soviet assault would come in the center. Smoke, fired on Company 3 and in front of Company 5, further isolated the German left flank (Company 1) which was where the 242d would attack. The fires on the reserve (Company 9) followed Tuchechevski's concept of engagement of the enemy through his depth. Though fires on the reserve certainly tipped the German's off that an attack was in the offing, they were totally unable to take any effective action. They were, in essence, in the same state as if they were totally surprised. Companies

2, 4, and 9 were ineffective, Company 5 was fixed and unable to join the fight, Company 3 was isolated by smoke and of no consequence, and Companies 6, 7 and 8 were suppressed by virtue of their position and range (Figure 14).

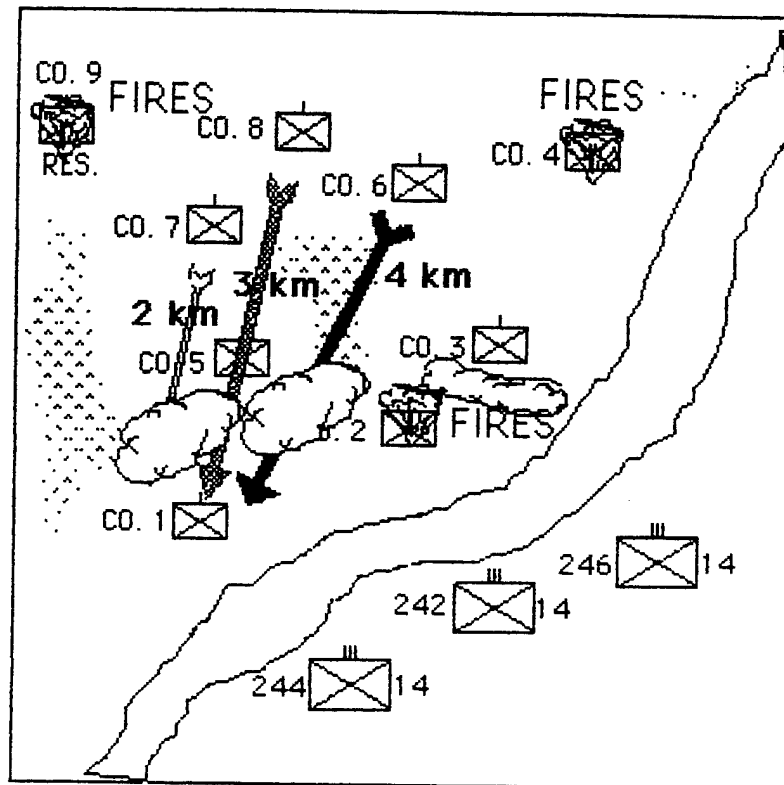


Figure 14. Isolation of German Company 1

Source: Map drawn by author.

In 15 minutes, Biryokov had achieved simultaneous effects across the battlefield through the use of fires in depth.

Detailed yet Flexible Planning

Soviet planning of fires and maneuver underwent significant evolution during World War II. In the early stages of the war, the Soviet's lack of skill in planning for the use of artillery (fires)

contributed to the many early German successes.⁷⁹ As the war progressed and the Soviets learned hard lessons, they developed a much more detailed approach to planning fires. This evolution of Soviet tactical planning doctrine was played out by General Biryokov and his staff at Bobruisk.

Biryokov was concerned about the level of detail in the plans. The brevity of the preparation (fifteen minutes to accomplish all necessary tasks) and fairly compressed time schedule between the initial preparation and the assault by the 242d Regiment required a very deliberate plan. Biryokov assigned tasks to each Regimental commander to be accomplished with fires. He left no doubt as to what was expected of them:

Indirect artillery fire will be under control of commanders at each echelon. I expect regimental commanders to plan and coordinate their artillery fires with the movement of individual infantry companies. Try to keep as close as possible behind the explosions of your own shells. To do this, you must make careful planning [sic] and a simple fire plan.⁸⁰

The regimental commanders complied with Biryokov's guidance concerning detailed planning. Leaders' reconnaissance was conducted to ensure precise coordinates were known for enemy positions. On one occasion, the commander of the 242d Regiment personally crossed the river and reconnoitered the western edge of the German Company 3 because he became confused by conflicting reports by his subordinates.

The regimental commanders also developed a system of prearranged signals (using colored flares and sound signals) to signal when each phase of the bombardment would begin and end. These signals would be initiated by forward observers and commanders who were given responsibilities to observe particular portions of the preparation.⁸¹

These observers monitored the status of the fire plan by use of a detailed worksheet which had been meticulously developed during the planning process. This worksheet allowed all leaders to follow the plan, yet permitted rapid reaction to changes as they developed (flexibility). For instance, during the preparation, the detailed planning allowed Biryokov to mass over 108 tubes on one German infantry platoon in Company 2. Yet, when this platoon was destroyed, the observer signaled the fact, and the fires were quickly shifted to different targets. In another exercise in flexibility, when the German Company 5 moved forward towards Company 3, a Soviet battalion commander recognized this and informed Biryokov. Biryokov immediately ordered the artillery fire plan to be adjusted and fires to be directed to Company 1. The shift of 188 cannons from different targets onto Company 1 was accomplished in less than six minutes.⁸²

The detailed yet flexible planning was made possible by constant involvement of commanders in the planning process. Commanders conducted reconnaissance and were involved in development of the fire plans. Very detailed war games and rehearsals took place prior to the attack. Biryokov had drilled his staffs in training to efficiently conduct detailed planning. Thus, they were able to develop not only primary plans, but also numerous contingency plans as well. Rehearsals at all levels stressed cooperation between fires and maneuver.⁸³

Focused Targeting

The dilemma facing General Biryokov in formulating his artillery preparation was a question of duration. A long preparation involving numerous targets would cause any surprise to be lost and would

undoubtedly forewarn the Germans of the impending attack. On the other hand, too short a preparation would most likely not have any effect on the defenders while still giving them some slight forewarning of the attack. Too much and he was doomed, too little and he was doomed. Biryokov had to separate the *it is necessary to engage* from the *it would be nice to engage* or, as Tukhachevskii said, "In planning an attack of the enemy, there is no need to attack it [with fires] over the whole front; the commander must focus his artillery fires on *what needs to be done at the time* (italics mine)."84

Biryokov's targeting focus was a fine example of targeting the right thing at the right time. With a favorable 7:1 ratio in artillery, the temptation for Biryokov would naturally be to engage the most enemy positions possible, thus leading to the loss of surprise. Biryokov instead targeted to create a fire plan that engaged, not the most positions, but the **right** positions. Biryokov and his staff targeted only one-third of the German forces (Companies 2, 4, and 9), but ultimately achieved effects on eight-ninths of the forces. By focusing the targeting on attacking Companies 2, 4, and 9 with fires, and 3 and 5 with smoke, Biryokov in effect created a "pocket" around Company 1, isolating it and allowing the 242d Rifle Regiment to attack with superior force ratios.

Conclusion

This first case study is an example of the implementation of all aspects of the integration triad. General Biryokov displayed an appreciation of the difficulties associated with the deliberate river crossing and integrated fires and maneuver to soundly defeat the German

infantry regiment opposing him. This battle was fought within very limited battlespace and clearly demonstrates that depth, detail, and focus are concepts that are applicable regardless of the size of the zone or sector.

This case study focused on a division operating within a fairly linear battlefireld framework, featuring relatively symmetrical forces. The next case study, the battle of Dien Bien Phu, will again focus on division sized operations, but the battlefield will be decidedly nonlinear, and the forces far more asymmetrical in capabilities. While the battle of Bobruisk highlights the need for disciplined adherence to the integration triad regardless of the size of the battlefield, the Dien Bien Phu case study will explore the integration triad in a less certain environment.

CHAPTER 5

CASE STUDY 2: THE BATTLE OF DIEN BIEN PHU

Background

Tactical Situation

The post World War II world found itself divided into three camps: the Soviet Union and its collection of satellites, bent on a program of power consolidation and influence expansion; the United States, enflamed with an anticommunist fever and dedicated (albeit somewhat destructively) to preventing the spread of communism throughout the world; and a collection of old colonial powers, struggling to retain their empires and whatever vestiges of influence they may still have in the new world order. It is the first and last camps that provided the participants for a struggle that took place in the valley in northwest Vietnam called Dien Bien Phu.

Post World War II Indochina was one of many colonial regions embroiled in uprisings against its European colonizers. French Indochina, made up of Laos, Cambodia, and three separate states, Tonkin, Annam, Cochinchina, which make up modern day Vietnam, was home to a Chinese backed communist insurgency known as the Vietminh (Figure 15). The Vietminh, an active "peoples' army," had been organized as a resistance force to oppose the Japanese during their occupation of Indochina during World War II. After the war, the Vietminh formalized

their organization along traditional military lines and turned their attention to other unwelcome visitors to their region: the French.

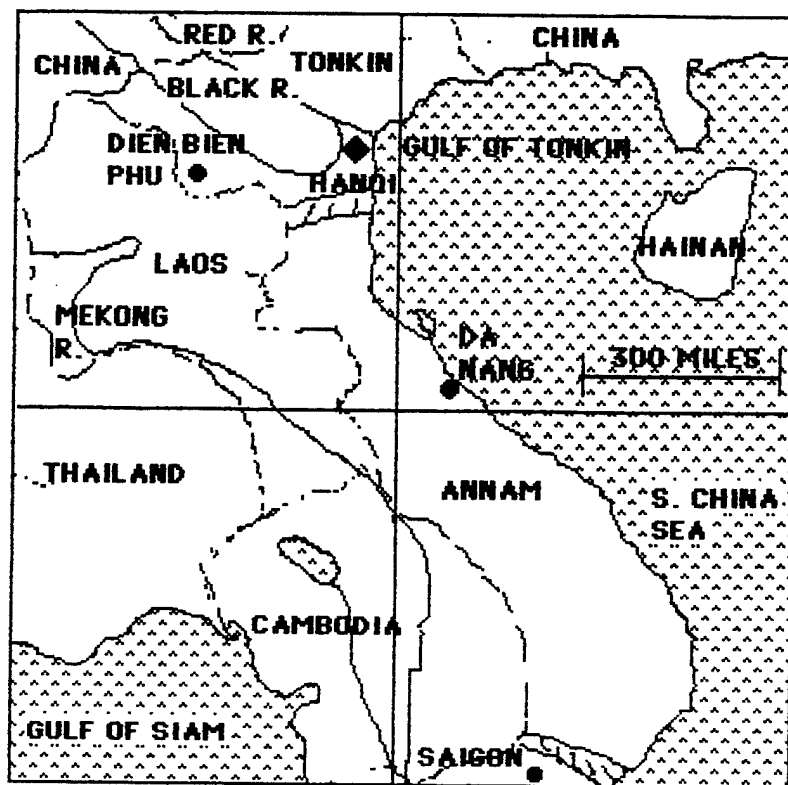


Figure 15. French Indochina

Source: Bruce R. Hupe, "The Generalship of General Henri E Navarre During the Battle of Dien Bien Phu" (MMAS thesis, United States Army Command and General Staff College, 1994), 34. Map drawn by author.

In the few years immediately after World War II, the Vietminh limited themselves to small actions against the French. The majority of the Vietminh funding for their insurgency was derived from the substantial opium trade in the northern most region of Tonkin. Following the end of the Korean War in July 1953, the Vietminh began receiving a great deal of Chinese provided Russian and American equipment, as well as Chinese trainers and instructors.⁸⁵ The steady

increase in the size and quality of the Vietminh regular army did not escape the notice of the French. A series of engagements with the Vietminh throughout 1952 and early 1953 had impressed upon the new French commander in Indochina, General Henri E. Navarre, the threat the Vietminh posed and convinced him of the need to close with and destroy a large portion of the Vietminh forces in the northern region of Tonkin, an area of considerable Vietminh strength.

Experience had shown Navarre that the Vietminh were reluctant to face the French in a set piece battle, so some amount of coaxing was going to be necessary to draw the Vietminh to the fight. The French felt that they had to offer the Vietminh a target sufficiently tempting to attempt an attack, yet strong enough to decisively destroy the Vietminh army when the attack came. The French chose the valley of Dien Bien Phu as the target, and named the operation CASTOR.

Dien Bien Phu is the largest open area in all of northwestern Vietnam (Figure 16).

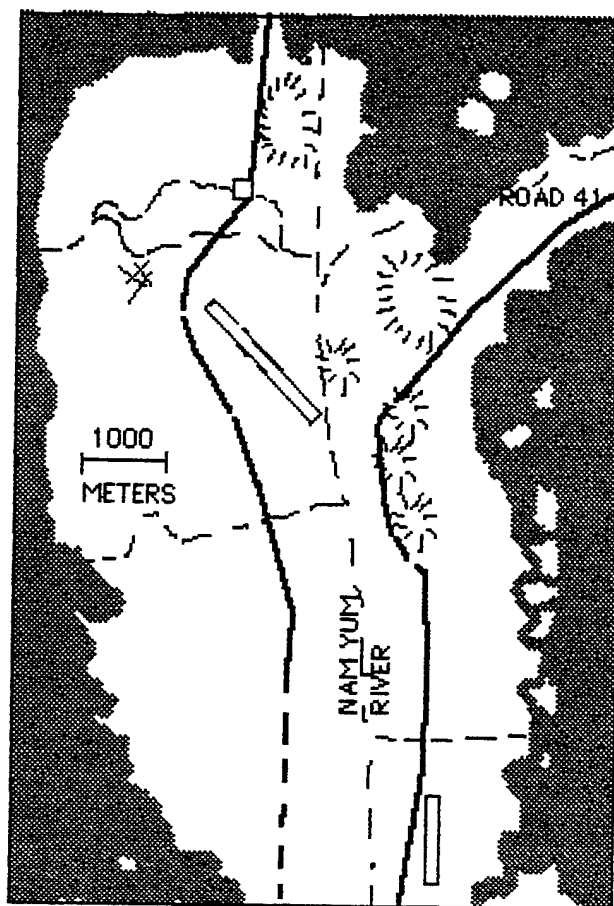


Figure 16. The Dien Bien Phu Valley

Source: Stephen L. Curtis, "Fire Support and the Maneuver Commander at Dien Bien Phu, Tragedy and Triumph," The Field Artillery Journal (Aug 1990): 31; and Bernard B. Fall, Hell in a Very Small Place (New York: J.B. Lippincott Company, 1966), 117. Map drawn by author.

It is a long, narrow valley, nine kilometers wide and sixteen kilometers long. Mountains rise on all sides of the valley, some standing several thousand feet higher than the valley floor. This valley was the main avenue the Vietminh were using to conduct their raids into neighboring Laos; an attempt to spread their insurgency westward. Navarre felt that the establishment of a strong French garrison at Dien Bien Phu would directly threaten the Vietminh's movements into Laos, as well as slow the opium trade. He envisioned a strong pointed Dien Bien Phu as a base

of operations, from which the French, supported by armor, artillery, and air support, could "radiate out" into the surrounding jungle, interdicting the Vietminh logistics, reserves, and finally the combat force itself.⁸⁶ Establishing such a large French force in the enemy's heartland would certainly prompt a reaction from the Vietminh.⁸⁷

The French felt that the operation would be successful largely on the basis of superior French firepower and the lending of the terrain around Dien Bien Phu to the application of firepower. The open and rolling terrain of the valley would make an attacking Vietminh force very vulnerable to the French Air Force. The terrain also favored the use of the American built Chaffee tanks that were to be deployed to the strong point once it was established. Finally, the French artillery was deemed more than adequate to silence any Vietminh artillery that was foolhardy enough to emplace in plain view in the valley.

Colonel Charles Piroth, commander of the French artillery, boasted before the operation began that, "No Vietminh cannon will fire more than three rounds before being destroyed by my artillery . . . besides, the Viets will be hard pressed to supply their pieces."⁸⁸

Operation CASTOR took place on November 20, 1953 and involved an airborne assault in the Dien Bien Phu valley. The assault, made by French, Moroccan, and Algerian paratroopers under the command of Colonel Christian de Castries, met very limited resistance by the Vietminh and captured the valley of Dien Bien Phu, the village of Muong Ten, along with a long abandoned Japanese airfield (Figure 17).

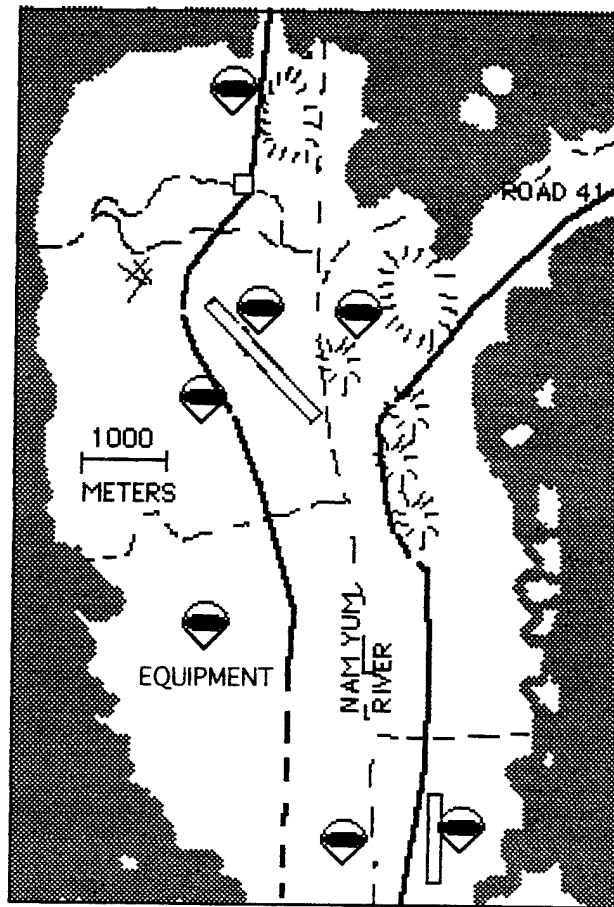


Figure 17. OPERATION CASTOR-Airborne Assault on Dien Bien Phu

Source: Bernard B. Fall, Hell in a Very Small Place (New York: J. B. Lippincott Company, 1966), 13. Map drawn by author.

Once the airfield was secured, additional troops and equipment were flown in and a series of strong points begun. The French buildup at Dien Bien Phu would continue for the next four months.

The Vietminh viewed the French arrival at Dien Bien Phu with a mixture of apprehension and joy. The commander of Vietminh forces in the area, General Vo Nguyen Giap, understood that the establishment of a French strong point would threaten the freedom of movement of his forces. The French air forces arriving at Dien Bien Phu posed the

biggest threat, but Giap concluded that if his forces doubled their precautions they would be able to move freely and avoid discovery and attack by the fighters and bombers from Dien Bien Phu.⁸⁹ Indeed, along with viewing the French arrival in the valley as a threat to be taken seriously, General Giap also saw opportunities. In describing the coming fight, Giap foresaw:

It will be a fight between a tiger and an elephant. If the tiger ever stops, the elephant will pierce him with his tusks. Only, the tiger doesn't stop. He lurks in the jungle by day and emerges only at night. He will leap onto the elephant and rip his back to shreds before disappearing again into the shadows, and the elephant will die from exhaustion and loss of blood.⁹⁰

Giap, did not fear the French nor their superiority in weapons or material. If they intended to install themselves in the middle of "his" world, some 220 miles from their nearest support in Hanoi then, Giap told his staff officers, the French were caught.

The three and a one-half month period between the French airborne assault on Dien Bien Phu, and the beginning of the Vietminh attack on the French positions there (November 20, 1953 to March 13, 1954), was characterized by a build-up of men and material by both the French and the Vietminh. Both commanders, Giap and Castries, understood the importance of logistics in the final outcome and both grasped the fundamental point that whoever won the logistics battle would also win the tactical battle. First, the opponents had to supply their own forces, the French 220 miles by air, and the Vietminh by an incredible 500 mile long human logistics chain that would work round the clock at resupply. Second, each had to try to keep his enemy from receiving adequate supplies.⁹¹ Again, the French by aerial interdiction, the Vietminh by manpower and sheer will.

The French threw themselves wholeheartedly into establishing the garrison at Dien Bien Phu. A series of strong points were constructed on the defensible terrain around the airstrip (Figure 18).

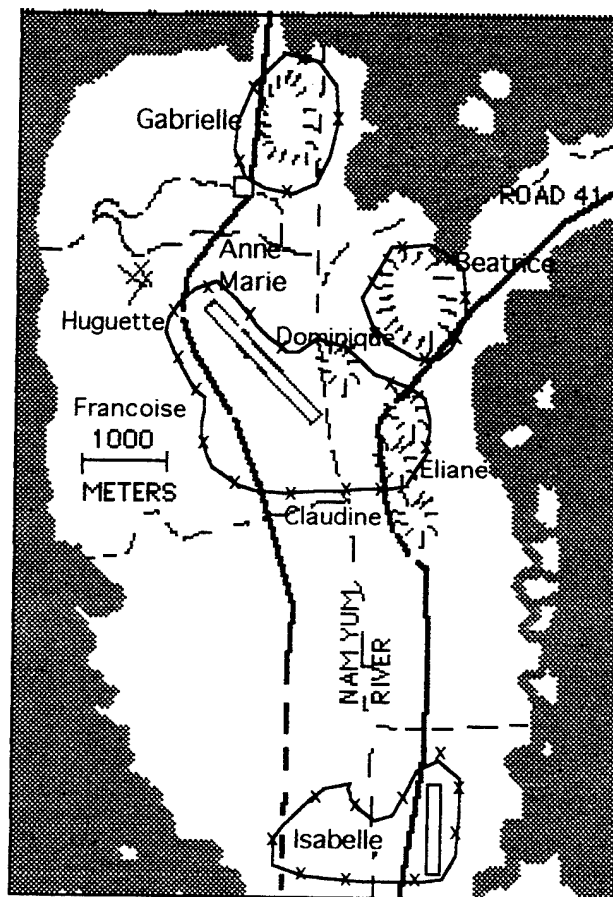


Figure 18. The Defenses of Dien Bien Phu

Source: Bernard B. Fall, Hell in a Very Small Place (New York: J. B. Lippincott Company, 1966), 117. Map drawn by author.

The strong points, affectionately given names of romantic Christian beauties, were principally viewed as five centers of resistance which formed the backbone of the defense: the outer strong points (Gabrielle, Anne-Marie, Beatrice, Isabelle), and the main defensive complex around the airfield (Eliane, Dominique, Huguette, Francoise, and Claudine). From the main defensive complex, Castries planned, through a system of

counterattacks, to be able to concentrate four-fifths of his combat power if any of the four outer strong points were threatened.

Planning

On the eve of the Vietminh attack on Dien Bien Phu, General Giap's forces numbered some 49,000 men divided into five divisions (twenty-seven total battalions of infantry): 304th, 308th, 312th, 316th, and the 351st. Giap also had an assortment of artillery (both field and anti-aircraft) batteries, roughly grouped into battalions.

His artillery totaled:

1. 36 105 millimeter Howitzers
2. 48 75 millimeter Pack Howitzers
3. 104 Other Field Guns of 57 millimeter or greater.⁹²

The French forces numbered 15,100 men at the height of the buildup. The force was comprised of a collection of eighteen battalions from throughout France's colonial possessions. The mainstay of the force were the four Foreign Legion, three Parachute Assault, and two Foreign Legion Parachute battalions. These battalions were some of the finest in the French army and included the 13th Legionnaire Half-Brigade, one of those legendary units in the French Army which had never lost a battle, even during the worst days of World War II . The remainder of the forces were composed of three Algerian and one Moroccan rifle battalion, tough, battle tested outfits of superior mettle, three T'ai battalions, natives of the local jungles, and one battalion of the newly formed Vietnamese army. The T'ai and Vietnamese battalions were of dubious quality and were not considered to be very reliable. Supporting the French forces was an assortment of artillery and air support:

1. 25 105 millimeter Howitzers
2. 4 155 millimeter Howitzers
3. 24 120 millimeter Mortars
4. 32 Bearcat Fighters
5. 45 Hellcat Fighter Bombers
6. 30 B-26 Bombers.⁹³

The increasing strength of the fortifications at Dien Bien Phu were noticed by General Giap. He saw the combination of complex obstacles and interior lines for the French as formidable challenges to a successful assault by his forces. He knew that success could only be gained by attacking a single strong point and overwhelming it before it could be reinforced. The interior lines that Castries counted on could not be allowed to exist.

Giap chose the eastern strong point Beatrice as the initial objective for the attack (Figure 19).

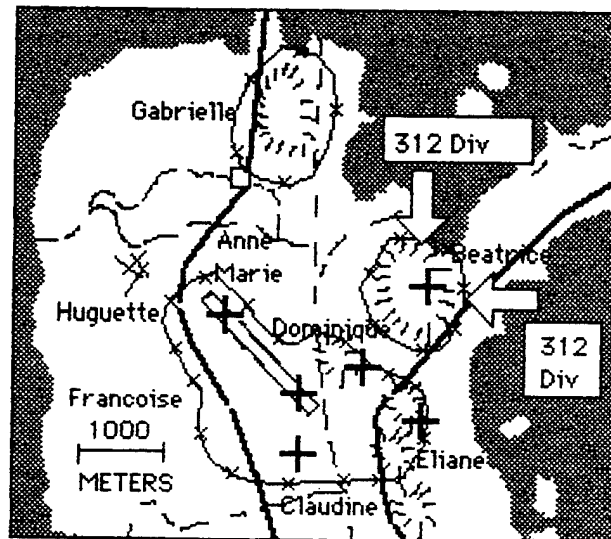


Figure 19. Vietminh Attack on Beatrice

Source: The positioning of the 312 Div is from Bruce H. Hupe, "The Generalship of General Henri E Navarre During the Battle of Dien Bien Phu" (MMAS thesis, United States Army Command and General Staff College, 1994), 62. Map drawn by author.

Concurrent with an attack by two regiments of the 312th Division on Beatrice, Giap planned to fix with fires any counterattacking force from Eliane or Dominique, as well as silence Castries's artillery and air power. Once Beatrice was captured, its hills would provide cover and concealment for Giap's shorter range artillery pieces which could then be brought forward to participate in the action.

Giap planned the capture of Beatrice as a springboard for the eventual strangulation of the entire French compound. After Beatrice, Giap intended to capture Gabrielle and Anne-Marie in sequence. Once these last outer strong points were taken, Giap intended to deliberately increase the pressure on the main defenses by a series of attacks that would enclose the defenders in an ever-shrinking circle (Figure 20). Eventually, Giap foretold, the elephant would bleed to death.

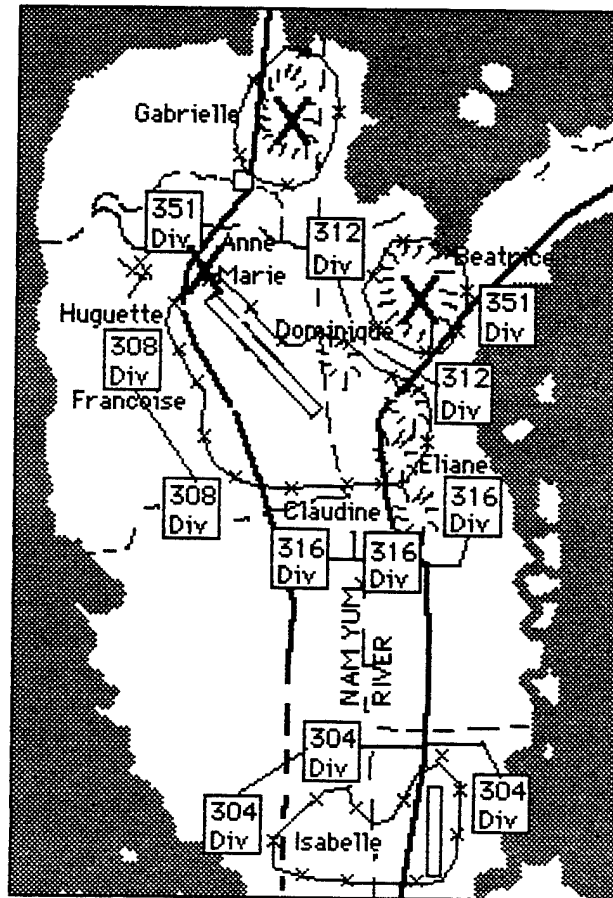


Figure 20. General Giap's Strangulation Plan

Source: Bruce H. Hupe, "The Generalship of General Henri E Navarre During the Battle of Dien Bien Phu" (MMAS thesis, United States Army Command and General Staff College, 1994), 36. and Bernard B. Fall, Hell in a Very Small Place (New York: J. B. Lippincott Company, 1966), 115, 129. Map drawn by author.

Execution

The Vietminh attack on Dien Bien Phu began at 1710 hours on March 13, 1954. General Giap, true to his plan, attacked Beatrice first. The eastern most strong point was held by the crack 3rd battalion of the famous 13th Legionaries. An intense artillery preparation preceded the attack made by two regiments of the 312th Division. The target of the artillery preparation was the battalion command and control bunker on Beatrice, the battalion command post on

Dominique (the French counterattack force), the French artillery in the central complex and on Isabelle, and the airfield.

The initial artillery fires directed against the two command bunkers was remarkably effective. The first volleys on Beatrice scored a direct hit on the battalion command bunker, killing the commander, Major Pegeaux, and the majority of the battalion staff. Minutes later, intense firing on the brigade command post on Dominique killed the brigade commander, Lieutenant Colonel Gaucher, and effectively severed all command and control of the forces on Beatrice. The three companies on Beatrice were, in essence, fighting their own isolated engagements. Though they fought with great determination, the companies of the Legion began to be pushed off the strong point at 2115 hours. At 0015 hours, the last company left fighting, Company 9, called for artillery fire on its own position, then went off the air.⁹⁴ The fire never arrived because the French artillery was under enemy fire and was suffering terrible losses.⁹⁵

The capture of Beatrice allowed Giap to move most of his artillery forward. The central defensive positions, which until this point had been under fire only from the longer range 105 millimeter howitzers, now suffered the combined effects of massed fires of all calibers. Throughout the remainder of the night of March 13th, and into the 14th, the fires were concentrated on the airstrip and supporting facilities. As daylight broke on the 14th, the Vietminh fires were so intense, and so accurate, the French Air Force had to evacuate their aircraft or face losing them on the ground. As it was, over thirty aircraft were destroyed on the ground before the evacuation at noon on

the 14th. The artillery fires destroyed the control tower, radar, power generation equipment, and cratered the runway; air support could no longer be based at Dien Bien Phu.

With the airfield in ruins, French air support was now coming entirely from Hanoi, at the extreme range of all the aircraft except the B-26. General Giap was now prepared to attack Gabrielle. Gabrielle, defended by the 3rd battalion of the 7th Algerian Rifles, was to be attacked by two regiments of the 308th Division. On the night of March 14th, Giap's artillery once again opened fire in preparation of the attack. At the beginning of the attack, GABRIELLE's command post, like that of Beatrice the night before, was crushed by 105 millimeter shells, and fell silent; the battalion commander, Major de Mecquenem, seriously wounded. At the same time, all communications with the main defenses to the south were cut off when the radio sets were destroyed. The company commander of the 4th Company of the Algerian Rifles succeeded in getting a message through to Castries: "The Viets have got a foothold on the summit. The artillery is giving us a pounding, but morale is terrific. We need fires quickly!"⁹⁶ Once again, the fires never came. The French artillery, caught in the fires of the Vietminh 75 millimeter guns and mortars brought forward to Beatrice, was incapable of responding. The French Air Force, forced to fly from airstrips at Hanoi, was repeatedly turned back by poor weather enroute to Dien Bien Phu.

By 0430 on the 15th, the situation on Gabrielle was tenuous at best. The senior officer capable of exercising any leadership over the battalion Captain Gendre, the commander of 3rd Company, assumed temporary command of the battalion. From his command post, Gendre

contacted Castries and requested an immediate counterattack with infantry and tanks from the main defensive positions in the center. At 0550 hours, a counterattack was launched by two battalions of infantry and six tanks under the command of Lieutenant Colonel Seguin-Pazzis. The counterattack was made under full observation of the Vietminh from the top of Hill Gabrielle. Numerous "choke points" were encountered along the route, which the Vietminh made use of in targeting Seguin-Pazzis's task force (Figure 21). "The crossing at Ban Ke Phai was blocked by enemy artillery fire and the counterattack was sheer agony. One of the battalions had all but disintegrated as the task force was unable to cross the ford [at Ban Ke Phai]".⁹⁷ The counterattack failed, and by 0900 Gabrielle had fallen.

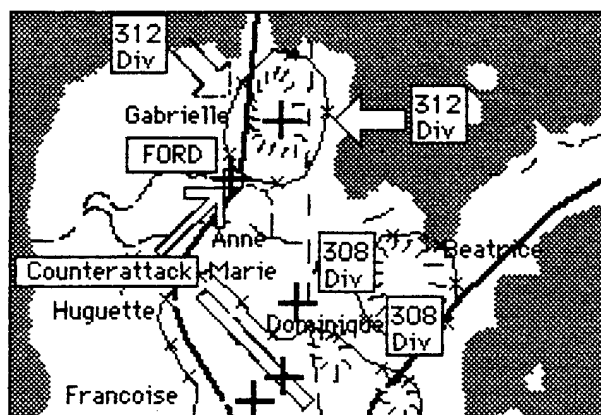


Figure 21. Vietminh Attack on Gabrielle, and French Counterattack

Source: Map drawn by author

The fight for Gabrielle had been bitter and the losses were heavy on both sides. Following the loss of Beatrice the day before, the loss of Gabrielle, known for so long as the best built of all strong

points at Dien Bien Phu, had a disastrous effect on the morale of the garrison.⁹⁸

The 3rd T'ai Battalion defending Anne-Marie, the last of the northern strong points, realized that they were next. Poor weather at the airfields in Hanoi prevented any aerial attack of the now entrenching Vietminh on Beatrice and Gabrielle, and French artillery was, for all practical purposes, so badly mauled it was ineffective. A cryptic note sent from Dien Bien Phu to Hanoi on March 16th summed up the feeling on Anne-Marie: "Viet-Minh bombardment of our positions - cavalcade of soldiers under fire - our artillery smashed by Viet-Minh - any attempts of movement under fire of Viet-Minh 105s - tragic - many wounded - gloomy atmosphere reminds of German concentration camps - catastrophic [sic]".⁹⁹ In a heavy fog, beginning the night of the 16th and continuing into the next day, the defending T'ai soldiers of 3rd Battalion quit their posts and slipped away into the jungle. Anne-Marie fell, the attack on the main defensive positions would come next.

The attack on the main portion of the garrison did come, but after some period of reorganization by Giap. The period of time immediately after the fall of the northern three strong posts was marked by consolidation by both sides, and the steadily tightening of the rings around the garrison. Bernard Fall calls this the period of strangulation and asphyxiation.¹⁰⁰ The final French outpost, Isabelle, surrendered on May 7th.

It is academic to recount or analyze the rest of the battle. The defining events took place in the early going. The analysis will

focus then on the attacks to take the northern strong points, namely Beatrice and Gabrielle.

Analysis

And all around them, as on some gruesome Judgment Day, mud covered soldiers, French and enemy alike, began to crawl out of their trenches and stand erect as the firing ceased everywhere. The silence was deafening.¹⁰¹

The loss at Dien Bien Phu spelled the end of the French colonial empire and the loss of the republic. Jules Roy calls it, "One of the greatest defeats ever suffered by the West . . . one of the biggest strategic blunders in French history."¹⁰² But why? How was the well equipped, well trained French Army beaten by a Vietminh army which was lead by a general who was a school teacher by training, and who had no formal military education? Napoleon said that in war, a great disaster always indicates a great culprit. For Jules Roy, the culprit is France itself, for giving the men at Dien Bien Phu a misconceived mission, and failing to adequately support them. Bernard Fall blames a series of miscalculations by the military leaders; underestimating the size and quality of Vietminh forces, overestimating the capabilities of the French Air Force, and failing to win the logistics battle. Bruce Hupe's culprit is General Navarre himself, while Colonel Bigeard, who held out on Isabelle until the very end, blamed the fortitude of some of the French soldiers and leaders: "The number of troops was not the issue. If I'd had ten thousand German SS troops, I'd have held out and won."¹⁰³

In the final analysis, it may have been a combination of culprits which caused the defeat; but then again, perhaps the French commanders were simply out maneuvered and out fought by the unimposing

General Giap. Certainly the French leadership underestimated the enemy capabilities, but the key to Giap's victory was what he did with those capabilities; his integration of his fires and maneuver spelled final victory in the first Indochina war.

Fires in Depth

The first impression when studying General Giap's use of fires at Dien Bien Phu is an appreciation for the breadth of the attack. Giap used his fires against a variety of seemingly unrelated targets across the battlefield which, as the assault began, time and time again thwarted French efforts to either reposition, reinforce, or repel the assault. By integrating the fires with the assault, Giap literally engaged the French across entire width of Dien Bien Phu. During the battle for Beatrice, the ground assault took place only by the 312th Division on the far eastern portion of the garrison, yet Giap's artillery engaged the French artillery on Isabelle and Claudine, command and control on Dominique, and the main airstrip on Huguette AND Francoise. Colonel Langlais, who took over command of the central main defenses of the garrison following Colonel Gaucher's death in his command bunker on Dominique, remarked with some confusion that it appeared only Beatrice was being attacked, although, he said, oddly the Vietminh were neutralizing other parts of the garrison with their fire.¹⁰⁴

The rationale behind the fires across the depth of the garrison by Giap soon became apparent to Langlais. Twice during the Vietminh attack on Beatrice, and twice again during the assault on Gabrielle Langlais personally called to Colonel Piroth, the commander of the

French artillery, to direct artillery fires against the attacking Vietminh. In the open gun pits at the French batteries, the gun crews bravely endured heavy bombardment from the Vietminh artillery. They managed to put up some fire, but it was without the massive and terrifying majesty the defenders expected. During the attacks on Beatrice and Gabrielle, the Vietminh were able to neutralize the French artillery at Claudine and Isabelle, leaving the French without support during the attack. So stunned was Colonel Piroth by his artillery's absolute inability to get into the fight, he chose death before dishonor, and committed suicide on the evening of March 15th.¹⁰⁵

The attack on Gabrielle demonstrates General Giap's employment of fires in depth. At the critical moment of the attack, just as the Vietminh were reaching the top of the strong point and Lieutenant Colonel Seguin-Pazzis was mounting a counterattack, the Vietminh artillery was engaging: Seguin-Pazzis's task force at the ford at Ban Ke Phai, de Mecquenem's command post on Gabrielle itself, Piroth's artillery, and the Algerian defenders atop Gabrielle. Giap had masterfully conducted simultaneous attack of the French throughout their depth.

Detailed Yet Flexible Planning

The Vietminh artillery fires that accompanied each attack confused and frustrated the French. The Vietminh were not known for their detailed and elaborate fire planning, and their efforts with fire support were dismissed by the French as unsophisticated and of no concern. Yet, when the attacks came, General Giap demonstrated a substantial grasp of the intricacies of fire support.

The key to the Vietminh success lay in their ability to bring artillery fires on predetermined targets, while remaining dispersed throughout the jungle. The Vietminh guns, laboriously man-handled through miles of dense jungle and steep mountain slopes, were concealed high on the mountains surrounding Dien Bien Phu. Once emplaced, the guns were practically immobile in their mountain top revetments. The challenge facing Giap was attacking the right enemy while being unable to reposition his own guns from their "artillery zones" (Figure 22).

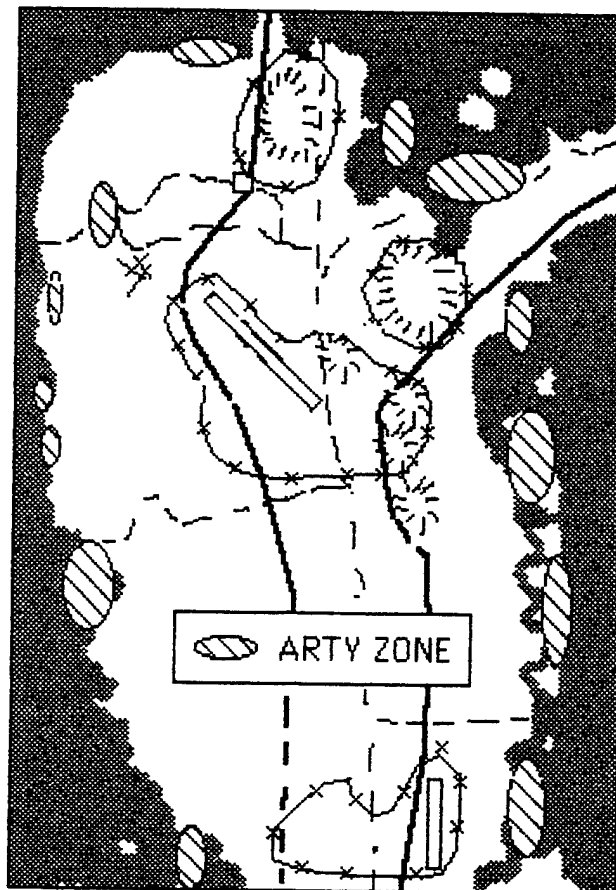


Figure 22. Vietminh Artillery Envelope

Source: Bernard B. Fall, Hell in a Very Small Place (New York: J. B. Lippincott Company, 1966), 184. Map drawn by author.

Giap's plan to integrate his fires and maneuver was a study in detail and meticulous planning. Several months after the battle,

General Giap summed up his solution:

We resolutely chose to strike with great deliberation and surety. Our planning helped us solve the problems of engaging with our artillery, just as it helped us overcome the problems of getting our supplies in. We patiently planned our course, educated our men, practiced and practiced again, all in order to create good conditions for the great victory we sought.¹⁰⁶

Giap's solution was to plan all fires down to the smallest detail. Even the number of shells on each gun was planned by Giap and his staff.

Major Le hong Duc, an artillery officer in Giap's forces, recalled later, "We had observed every detail and made a minute study of the terrain several nights before the attack (on Beatrice). We used models of the terrain to determine ranges and where we would find targets."¹⁰⁷

Complementing perfectly the detailed and centralized planning by Giap was the decentralized execution and flexibility built into the plan. For example, General Giap, in his effort to win the logistics battle, was determined to prevent supplies from reaching Dien Bien Phu. The French were resupplied exclusively by air, so Giap planned to destroy the resupply aircraft on the runway. The Viet Minh guns were registered for the area used to off load aircraft. After the loss of over a dozen transports on the ground, the French took to stopping the Packet transport aircraft at random spots on the mile long airfield and off loading there. Giap countered by giving individual battery commanders sectors of the airstrip with the mission to destroy transport planes which stopped there. The next day, March 11th, a single 75 millimeter pack howitzer commanded by Gun Commander Tu, sitting two and a half miles from the airstrip, opened fire on a Packet that stopped on

the runway. The crew's third shot scored a hit on the plane. The gun, with its stock of thirty shells, had been detailed to destroy the plane when it entered its zone.¹⁰⁸ Detailed planning, yet the flexibility to react to change and seize opportunities were integral in Giap's plans.

Focused Targeting

The situation General Giap found himself in was remarkably similar to General Biryokov ten years earlier at Bobruisk: overwhelming superiority in artillery, a great many targets, but not enough time to engage them all. General Giap had to focus his targeting efforts.

Giap knew that the French enjoyed the advantage of interior lines, both of communications and maneuver. Interior lines were a marked advantage for the defender, for through their use the defender could reposition at will, presenting increased strength to meet an attack. Giap saw the garrison as:

Well defended by a strong force. The artillery and air forces of the enemy could intercept any of our approaches across the flat plain. A mobile force of paratroopers and tanks was ready to coordinate its actions along with the resistance centers to counterattack and break any offense. Herein layed the key to victory.¹⁰⁹

Interior lines concerned Giap. The French artillery and air could work from a central position, striking any threatened portion of the garrison, while a mobile reserve of paratroopers and tanks, in coordination with the strong points, would use the advantage of interior lines to reposition and blunt the attack. These became Giap's targeting priorities.

The attacks on Beatrice and Gabrielle were accompanied by remarkably predictable artillery fires. The initial preparations would concentrate on destroying the command and control facilities: bunkers

and radio antennas. The fires would then shift to suppression of the French artillery batteries and infantry positions at the point of attack. These fires would coincide with the Vietminh infantry assaults and would wreak havoc on the French gun positions. As the assault broke through the French positions, fires were shifted to the reserves.

The campaign against the French Air Forces was continuous, and designed to drive the air force from Dien Bien Phu. Giap's guns focused on rendering the airstrip unusable through a systematic destruction of the facilities, including the tower, radar, radio antennas, and the airstrip itself. By the second day of the fifty-four day siege, the airstrip had been rendered useless for landing, and all resupply had to be conducted by parachute drop, a particularly inexact science that, more often than not, resulted in the supplies landing on the Vietminh positions. Additionally, all close air support now had to come from bases near Hanoi, 350 kilometers distant. This arrangement reduced the air support to almost ineffectual:

Over the mountains between Hanoi and Dien Bien Phu, which was often obstructed with storms and caused the planes to turn back, pilots were reduced to their own guesses, without even radar or a radio beam to direct them . . . To operate in a basin into which, the few pilots who were able to find it, were forced to dive blind, through air space saturated with clouds, in itself called for considerable virtuosity.¹¹⁰

Giap had, through very precise and focused execution of fires, eliminated all of the advantages enjoyed by the French in their central position.

Conclusion

Nine years after his victory at Dien Bien Phu, General Giap told Jules Roy and other French journalists: "If you were defeated, you

were defeated by yourselves."¹¹¹ Perhaps Giap was reminding the French of the teaching of Sun Tzu, who wrote that, "Securing oneself against defeat depends on one's own efforts, while the opportunity of victory must be afforded by the enemy."¹¹² General Giap could not create victory, he could only create the conditions that would cause victory. Through his use of integrated fires and maneuver, Giap negated the French advantage in both firepower and mobility, and thus created a condition which was conducive to a French defeat.

The integration triad has once again proven a useful tool in analysing fires and maneuver. While this battle is strikingly different from the battle of Bobruisk, they both share a common feature in the integration of fires and maneuver. The commanders in both battles operated within the framework of the integration triad, though neither commander had a formal name for the process.

The next case study will examine a defensive operation by a mechanized brigade at the National Training Center. Analysis of this operation is valuable for several reasons. First, the initial two case studies involved offensive operations conducted by predominately light forces. An example of a heavy force defense is needed to balance the lessons that are drawn from all three cases. Second, the National Training Center offers as near perfect a battlefield laboratory as possible in which to test the integration triad. External factors such as Biryukov's superior force ratios and the impossibly long French lines of support are removed from the battlefield so that the actions of the commander can be evaluated on their own merits. The next case will validate the integration triad as a valid measure of integration, as

well as complete the data pool of commander's actions that insured integration.

CHAPTER 6

CASE STUDY 3: BRIGADE DEFENSE AT THE NATIONAL TRAINING CENTER

Background

The National Training Center (NTC), situated in the Mojave Desert in south-central California, is arguably the premier training site in the world for heavy mechanized forces. Every month a United States Army brigade, together with all of its attachments, deploys to the NTC for fourteen days of simulated combat operations against the Opposing Force, or OPFOR. The OPFOR is an United States Army unit stationed at the National Training Center. They are organized, equipped, and trained to fight as a Soviet style unit--the 32nd Guards Motorized Rifle Division.

In addition to the OPFOR, another group of soldiers, the Observer Controllers, or OCs, add to the training brigade's experience. The OCs are neither OPFOR nor BLUEFOR (members of the training unit), but rather, are impartial participants who provide training feedback to the BLUEFOR and control the battlefield to insure compliance with the Rules of Engagement (ROE). The OCs are linked by radio to sophisticated data collection center, the Training, Analysis, and Feedback center, or TAF. The TAF, or Star Wars Building as it's sometimes called, is the hub of what is certainly the most complex and comprehensive feedback and data collection center in the world. Little happens on the battlefield

that is not noticed at the TAF. Everything from artillery fire missions to tank main gun engagements are registered and assessed in the TAF.

The National Training Center exists for one reason: to provide the toughest, most realistic training available. It is, said Colonel James O'Neil, a former commander at the NTC, the first fourteen days of the next war. It is into this environment that the 2nd Brigade of a U.S. Army Infantry Division (Mechanized) deployed for rotation 94-08 in May of 1994.¹¹³

Tactical Situation

2nd Brigade was organized under the 52nd Infantry Division (ID) upon arrival in the theater of operations. The 52 ID was composed of 1st Bde, 54 ID; 2nd Bde; 3rd Bde, 52 ID; and the 52nd Aviation Brigade. The 52 ID was given the mission by the 10th Corps to defend in sector along PL TEAK to destroy the enemy's 41st Motorized Rifle Division (MRD) (Figure 23).

The 41st MRD would attack with two Motorized Rifle Regiments (MRRs) in the 1st echelon, the 133rd MRR in the south, and the 32nd Guards Motorized Rifle Regiment (GMRR) in the north. The following two regiments of the division, the 127th MRR, and the 27th Tank Regiment (TR), would follow as the second echelon.

The 52nd ID commander decided to defend with two brigades abreast: 2nd Bde in the north as the supporting effort, and 3rd Bde in the south as the main effort. 1st Bde would serve as the division's reserve. The division commander intended for 2nd and 3rd Brigades to defend in sector to destroy the attacking regiments (2nd Bde would destroy the 32 GMRR, 3d Bde the 133rd MRR). Simultaneously, the 52nd

Aviation Brigade, the Division Artillery (DIVARTY) and Corps assets would attack the 2nd echelon regiments of the 41st MRD, forcing them to assume a hasty defense. When the 2nd echelon regiments were stopped, 1st Bde would counterattack through 3rd Brigade to complete the destruction of the 2nd echelon regiments.

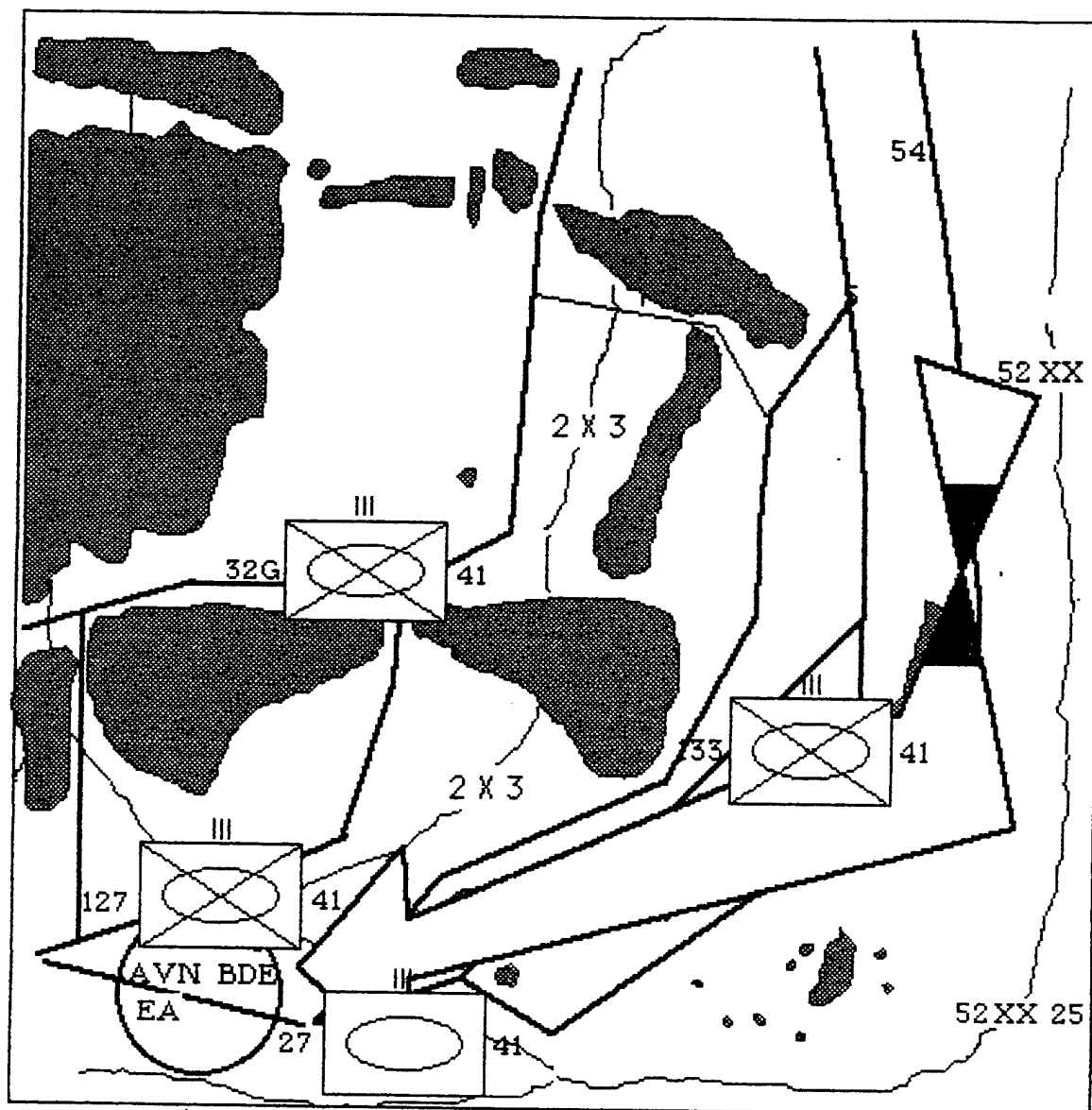


Figure 23. 52 Infantry Division Tactical Situation

Source: Map drawn by author.

The 2nd Bde was composed of only one mechanized task force (Task Force Infantry). In addition to the task force, the brigade also had two battalions of 155 millimeter self propelled artillery and a Target Acquisition and Reconnaissance Platoon (TARP) of six OH58C observation helicopters. The 2nd Bde was given a sector approximately 45 kilometers deep (east-west) and 45 kilometers wide (north-south) (Figure 24).

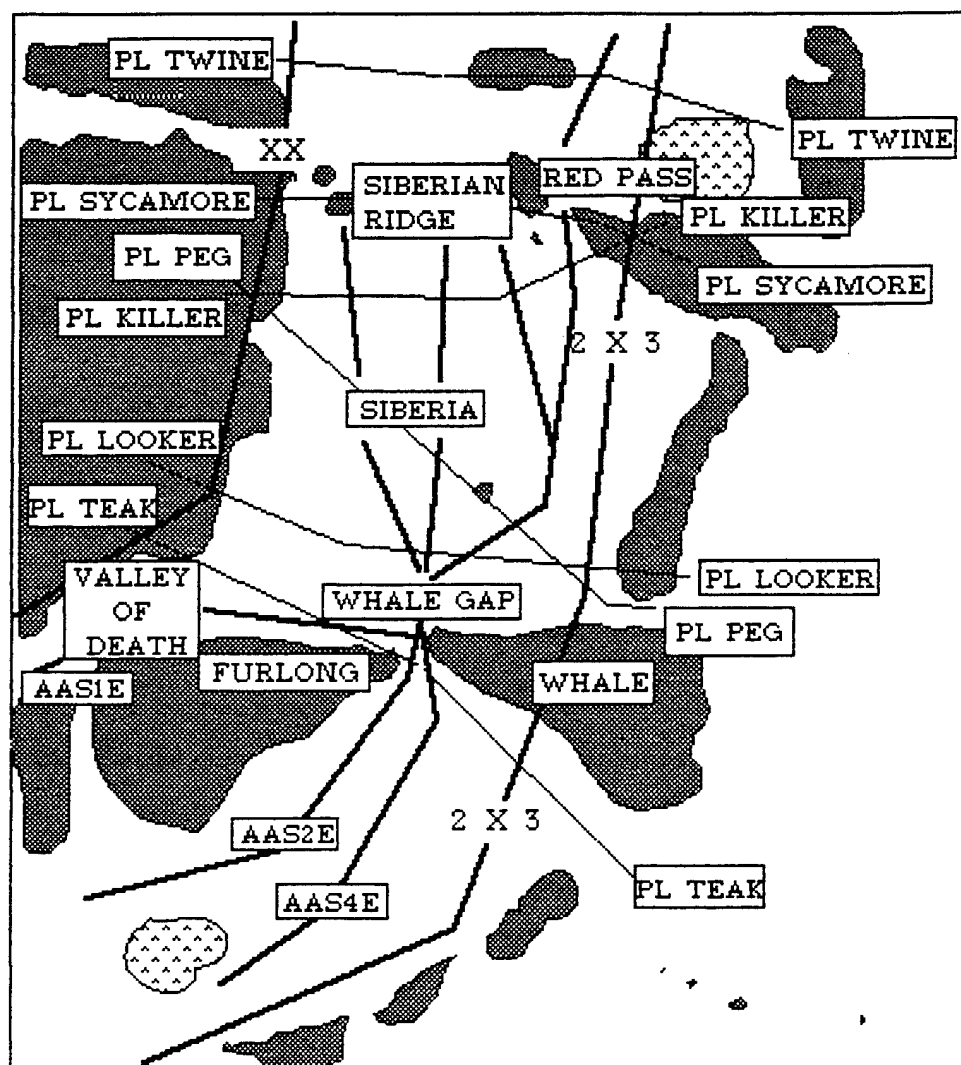


Figure 24. 2nd Brigade's Sector and Enemy Avenues of Approach

Source for Figure 24: The avenue of approach information was included in the S2's annex in the brigade operations order: Operations Order (OPORD) number 94-26, 18 May 94, Combat Training Center (CTC) Warrior Information Network (WIN), Ft. Leavenworth, KS. Map drawn by author.

The sector was marked by three distinct avenues of approach leading into the sector. The brigade intelligence officer (S2) named these avenues of approach AAS1E, AAS2E, and AAS4E. The terrain was fairly open along AAS2E and S4E until the avenues of approach passed the terrain features known as the whale/furlong gap. Here, the terrain constricted considerably before opening back up north of the gap. North of the gap, the terrain rose gradually through the plain known as Siberia until it peaked along the Siberian Ridge. North of the ridge the terrain fell off markedly into a maze of wadis (dried stream beds, up to 25 feet deep) and small "bowls" and depressions. In the western portion of the sector, AAS1E emerged from a long, narrow valley known as the Valley of Death. Just north of the furlong S1E joins with the other two avenues of approach and continues towards the Siberian Ridge.

The brigade S2 felt that the 32nd GMRR's most likely course of action (COA) was an attack with two motorized rifle battalions (MRBs) in the first echelon; one MRB on S2E, and one on S4E. The S2 felt the enemy would march a motorized rifle company (MRC) down AAS1E to protect the northern flank of the regiment as it attacked. The other two MRBs of the regiment would follow the lead two battalions, ready to cross over avenues of approach to exploit successful penetration by either first echelon battalion.

The forces available to each side were:

2nd Bde
Task Force Infantry
(2 tank companies 14 tanks each, 2 mech inf companies
(14 M2 Infantry Fighting Vehicles each) and 1 anti-
tank company (13 M3 Tow Fighting Vehicles).
1 Direct Support Artillery Battalion (24 guns)
1 Reinforcing Artillery Battalion (24 guns)
1 TARP (6 OH-58C)
1 Engineer Battalion
Other attachments
32 GMRR
4 MRBs (Numbered 1-4) (10 tanks, 29 BMPs each)
1 Anti-Tank Company
3 Self Propelled Artillery Battalions

Figure 25. Forces Available to Both Sides

Sources: Operations Order (OPORD) number 94-26, 18 May 94, Combat Training Center (CTC) Warrior Information Network (WIN), Ft. Leavenworth, KS. Annex A, Task Organization, A-1; Executive Summary, OPFOR OPORD 94-08-06/MRR Attack (Ft. Leavenworth, KS: CTC WIN, 18 May 94), 1.

Planning

The commander of 2nd Bde, while conducting his own commander's estimate of the situation, recognized several characteristics of the battlefield that would have a significant impact on the mission.¹¹⁴ First, the enemy's approach into and through the brigade sector contained three distinct areas (Figure 26: the region south and west of the confluence of the three avenues of approach at the Whale/Furlong/Valley of Death choke point (area 1 on Figure 26); the

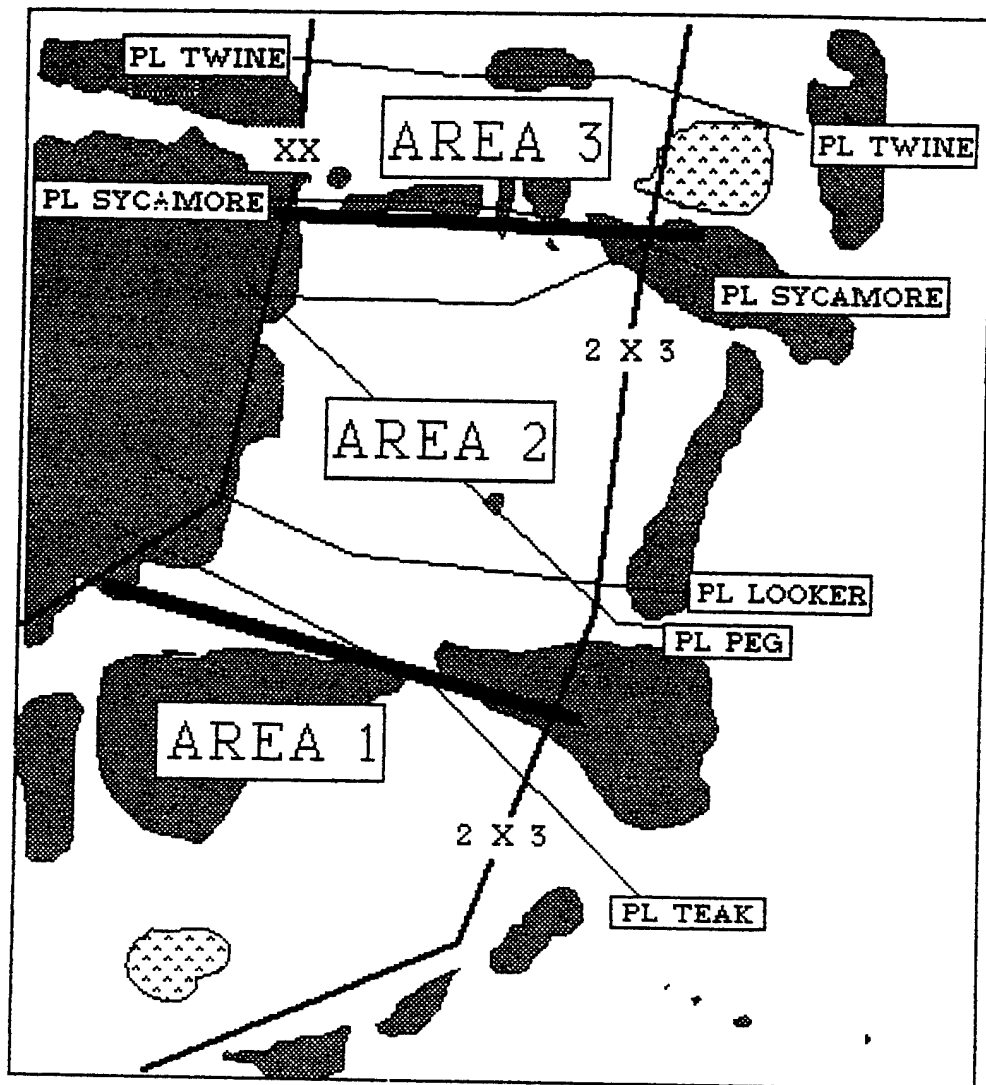


Figure 26. 2nd Brigade Terrain Analysis

Source: Map drawn by author.

rising and open area known as Siberia up to the Siberian ridge (area 2); and the broken and canalized terrain north of the Siberian ridge to Hill 720 (area 3). Each of these areas posed certain advantages and disadvantages for both the attacker and defender; the key for the brigade commander was to maximize the advantages in each area when he structured his defense.

The brigade commander's most serious initial concerns in developing the brigade sector dealt with force to space ratios, that is, the ability to focus the right effects on the enemy in each of the three areas. As the brigade commander studied his three areas of the battlefield (with help from his staff's mission analysis), he became convinced that the best solution lay in conducting a defense deep in his own sector, in area 3.

A defense forward, where areas 1 and 2 met, initially seemed the best solution. The terrain naturally constricted at this point, which favored the defender. The OPFOR would be denied any freedom of action and would be forced by the impassable terrain between the AASLE and the other two avenues to show his hand early and commit to a course of action. The drawback to this course of action was the width of the sector at this point, to be covered by only one task force. If the enemy regiment was able to mass and penetrate the task force, the open terrain to the north would allow the OPFOR move rapidly move unopposed to the brigade rear. A defense south of the Whale/Furlong was not considered feasible because the limited depth of the sector to the south would not allow early enough engagement of the OPFOR in the brigade deep fight.

The brigade commander envisioned a reverse slope defense (north side) of the Siberian ridge. The commander felt that by denying the enemy the Red Pass avenue and positioning the task force just north of the broken terrain coming off of the Siberian ridge, the enemy would be unable to generate the mass necessary for a penetration of the task force. The commander wanted fires to support the brigade's effort to

break the enemy's momentum by attacking one of the first echelon MRBs and cause the MRR to commit one MRB at a time into the task force defense. The commander stated his intent as:

The enemy must be blinded to our defensive efforts . . . Our deep fight will disrupt and delay one of the lead MRBs and cause the enemy to enter the close battle piecemeal. We will use a reverse slope defense between PL SYCAMORE and PL TWINE to destroy the enemy in the close battle. I will take risk in the close battle by overwatching the BDE obstacle in Red Pass with less than a full company team, and by not maintaining a Bde reserve.¹¹⁵

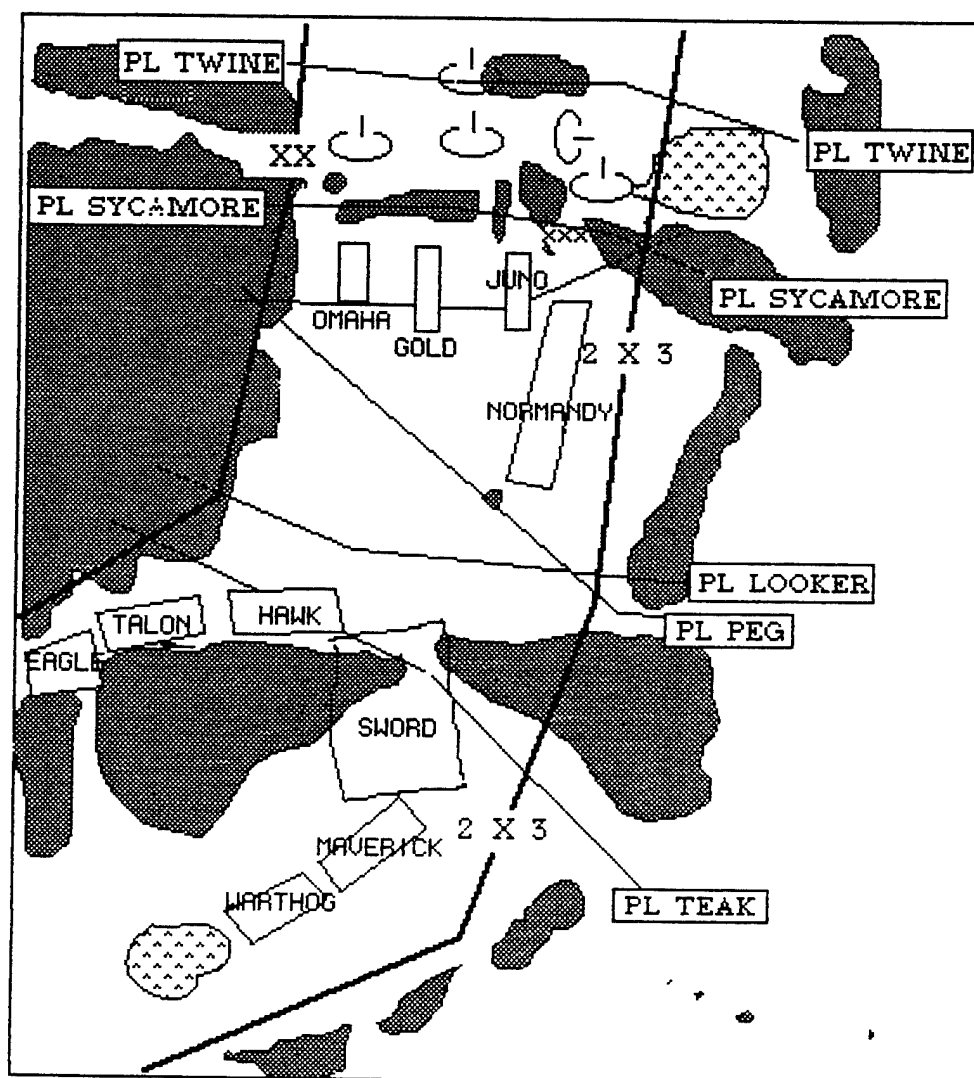


Figure 27. 2nd Brigade's Tactical Plan

Source: Operations Order (OPORD) number 94-26. Map drawn by author.

The plan developed by the brigade and Task Force Infantry staffs, and refined by the commander, placed Task Force Infantry in battle positions between PLs SYCAMORE and TWINE (Figure 20). Red Pass, heavily obstructed by the engineers, was defended by two tank platoons. Fires (field artillery, close air support (CAS), and electronic warfare (EW) would:

Be focused on the southern MRBs in EAS WARTHOG, MAVERICK, SWORD, and NORMANDY. Use smoke and artillery FASCAM (Family of Scatterable Mines) on the Whale Gap to slow his [southern MRB] movement and confuse his C2 [Command/Control]. *The focus of fires is on the southern/eastern most MRB (italics mine).*¹¹⁶

The brigade commander intended to use the entire depth of his sector in order to defeat the 32nd GMRR. CAS and artillery, directed by the TARP, Combat Observation and Lasing Teams (COLTs), and Air Force Enlisted Tactical Air Controllers (ETACs), would slow and attrit the southern or eastern most battalions, causing them to fall behind the battalion in the north (west), and effectively denying the Red Pass option to that battalion. The battalion in the north, deprived of the support of its adjacent battalion, and forced to disperse to negotiate the broke terrain along PL SYCAMORE, would amble piecemeal into the Task Force's engagement areas (EAS FORD, CHEVY, DODGE, and, UTAH), where they would be destroyed in order.

Execution

Marshal Tukhachevskii, in the 1936 Soviet Army Regulations PU-36 (comparable to FM 100-5), wrote that reconnaissance "Is to be carried out ceaselessly and without interruption . . . before, during, and after battle, and in lulls."¹¹⁷ The 32nd GMRR followed Tukhachevskii's dictums religiously. A reconnaissance company from the Divisional reconnaissance battalion entered the 2nd Brigade sector at

dusk on the 16th of May. The company attempted to identify the general positions of the brigade's defense, but the positioning of the defense so far to the north thwarted the divisional reconnaissance company's efforts. Additionally, a very strong counter-reconnaissance effort by the brigade between PL TEAK and PL LOOKER, to include COLTs positioned in observation posts (OPs) made any further penetration by the reconnaissance impossible. During the first twenty-four hours of the reconnaissance effort, three of four BRDMs (wheeled reconnaissance vehicles) and two of four BMPs (tracked infantry fighting vehicles) in the reconnaissance company were destroyed, 60% of it by the COLTs calling for Copperhead laser guided munitions.¹¹⁸ By time the divisional reconnaissance moved out of sector at 2230 hours on May 17th, the only information they were able to provide the commander of the 32 GMRR was information on where the 2nd Bde was not; they were not forward of the Siberian ridge.

The regimental commander had little information on the disposition of the defending brigade. By the time the divisional reconnaissance exited the sector at 2230 hours, the Regimental commander was able to deduce that 2nd Brigade was conducting a reverse slope defense, but location and orientation of the brigade was still a mystery. The regiment was scheduled to begin the attack at 0600 hours on the 18th, the next morning. At 2330 hours, as his own regimental reconnaissance company was entering the brigade sector, the regimental commander made several modifications to his plan based on the lack of information about the 2nd Brigade. Because his forces had been able to thoroughly reconnoiter and declare it clear, the regimental commander

decided that the entire regiment would attack through the Valley of Death. A small flank security detachment would move along the southern two avenues to protect the flank of the main body as it attacked.

The regimental commander also organized the 32nd GMRR in a different formation than anticipated by the 2nd Brigade. The brigade planned on the regiment attacking in a 2 up, 2 back formation (2 battalions in the first echelon, 2 in the second). The regimental commander intended to attack in a 1-2-1 advance guard formation (1 battalion leading the regiment, follow by 2 battalions abreast, trailed by the last battalion). The Regiment's 1st MRB would organize as a forward detachment (FD) and travel thirty minutes ahead of the main body. 1st MRB's mission was to attack to seize a critical portion of constricted terrain on the Siberian ridge. This narrow passage, named "Schoolbus Wadi" because of the long-abandoned school bus residing there, is the highest speed passage through the very rough terrain on the Siberian ridge, and was thought by the 32rd GMRR's commander to be key terrain in sustaining the regiment's advance. If the FD could secure the wadi, the main body of the Regiment could retain some of its momentum and mass as it moved off the Siberian ridge.

At 0530 on the morning of the 18th, three OH58-Cs from the TARP moved forward and established observation posts (OPs) south of PL TEAK. At the same time, the OPFOR's 1st MRB, the forward detachment, crossed its report line of departure and began moving along AAS1E towards the Valley of Death. The movement was detected by one of the TARP aircraft and reported to the 2nd Brigade headquarters. In the early morning light the observers in the aircraft had difficulty in determining the

exact number of enemy vehicles, though it was obvious it was many more than would be expected if only a flank security MRC was going to move down the Valley of Death. The brigade S2 determined that these vehicles were the first echelon battalions of the regiment, and that they would attack, not on avenues S2E and S4E as he had originally thought, but instead, through the Valley of Death. The movement of the enemy towards the Valley of Death triggered a brigade branch plan. Fires would still attack the southern MRBs, but the attacks would take place in EAS EAGLE, TALON, and HAWK with CAS, and EAS SWORD, JUNO, and GOLD with CAS and artillery.

As the 1st MRB continued to move towards the Valley of Death, the brigade S2 realized, based on the number of vehicles reported, that the lead element was only a battalion sized force. He correctly concluded that the enemy regimental commander had formed either an advance guard or forward detachment, and that the main body of the regiment, with two battalions abreast, was trailing this lead battalion by thirty to forty-five minutes. The brigade commander decided to carry on with the deep attack against this lead battalion. As soon as the regimental main body closed to within range, the brigade focus would shift to the southern MRB of the main body. The brigade commander gave guidance over the radio to the brigade fire support officer (FSO) that one company from the lone MRB was to be destroyed by fires before it reached PL SYCAMORE. The brigade commander stated that he felt if the MRB was attrited by one-third, it would not be able to assist the main body of the regiment in its attack.

At 0620 hours, the FD reached the Valley of Death and began moving eastward. Almost immediately, the MRB was attacked by CAS aircraft directed by the brigade ETAC and a COLT. The attacks continued. As the FD entered EA TALON, artillery fires began falling, with great effect. The 1st MRB was suffering severe attrition in its movement through the series of deep engagement areas. By the time the FD reached EA LOOKER it had lost three T-72 tanks, ten BMPs, and two BRDMs with AT-5 anti-tank missile launchers. The battalion was in shambles, and was not yet in direct fire contact.

During the time the FD was being attacked in the Valley of Death, the main body of the regiment, 2nd MRB in the south as the main effort, and 4th MRB in the north as the supporting effort, began moving towards the Valley of Death. As with the FD, the TARP aircraft observed this movement and alerted the 2nd brigade operations center. With the new information, the brigade S2 was positive that the entire regiment would attack through the Valley of Death. The last CAS missions were launched from the airfield in order to catch the southern MRB while it was still in column in the Valley of Death.

As the two MRBs entered the Valley of Death, the scene that played out was a replica of the destruction that had taken place forty-five minutes earlier. The southern MRB was attacked with CAS initially in the three EAs, and then with CAS and artillery as it left EA TALON and moved towards EA SWORD. The TARP took control of the artillery fires and placed an intense volume of terribly accurate artillery fires on the southern MRB (2nd MRB) just west of EA SWORD (Figure 28).

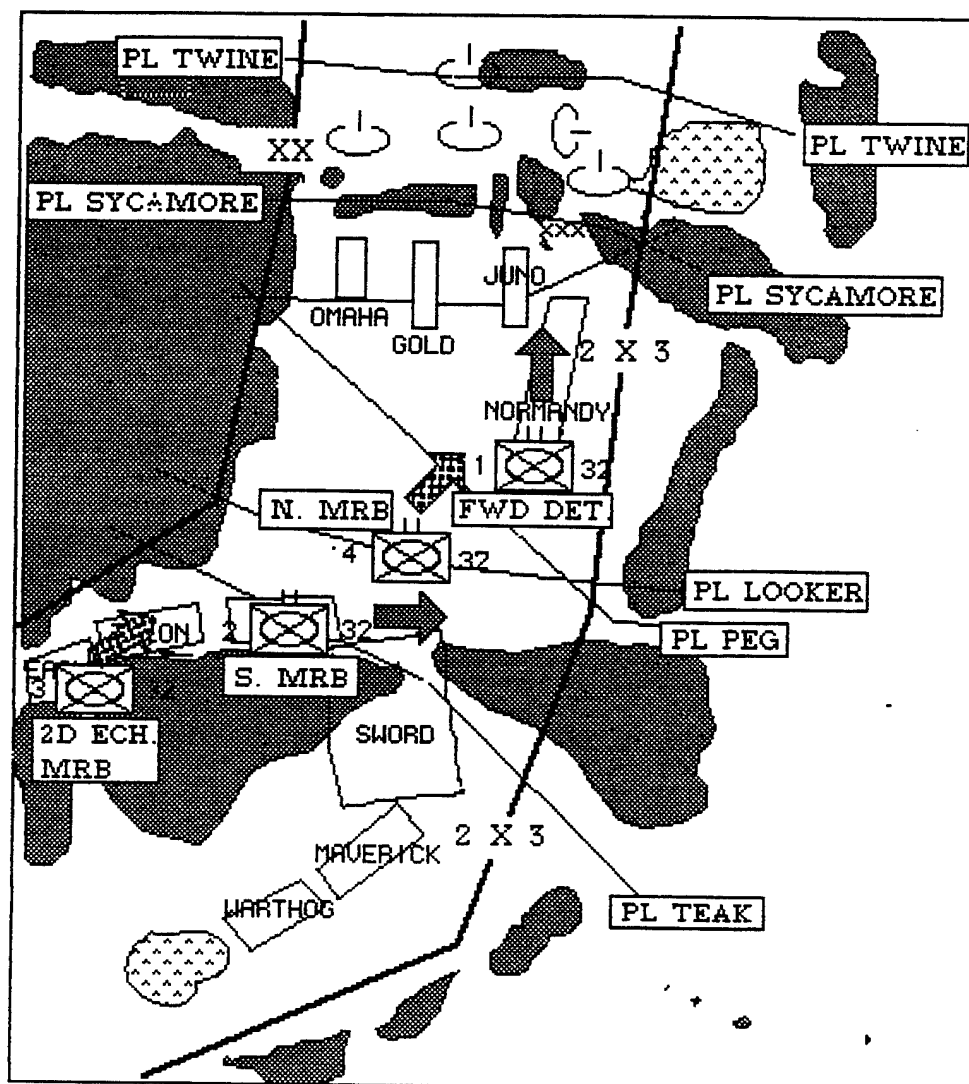


Figure 28. Separation of 32 GMRR Echelons

Sources: Fire Mission Log and CAS Mission Log, Division ALO, Operations Group, Rotation 94-08, Defense in Sector (Ft. Leavenworth, KS: CTC WIN, 18 May 94); Take Home Packet, Rotation 94-08, Brigade Trainers, Fire Support (Ft. Leavenworth, KS: CTC WIN, 18 May 94), V-3-1 to V-3-4. Map drawn by author.

So intense was this fire, and so confusing the mix of high explosive, electronic warfare jamming, and smoke munitions on the 2nd MRB's command and control, that the 2nd MRB, now down to less than two MRCs in strength, was forced to halt in EA SWORD to regroup and reestablished control. The 4th MRB continued to move north east and was redesignated

by regimental commander as the main effort (given the disruption in the 2nd MRB). As the 4th MRB entered EA JUNO, the 2nd MRB was still in EA SWORD, just having finished getting back into formation. The separation that the brigade commander wanted was achieved. Task Force Infantry would face the 32nd GMRR a battalion at a time, rather than in mass (and two of the battalions were horribly mauled; they would enter the close fight at less than 50% strength).

Retelling of the rest of the battle is, as in the cases of Bobruisk and Dien Bien Phu, a test of academics. The fight was won, and the lessons learned in the opening minutes of the battle. The OPFOR, with its forward detachment and main effort battalions attritted to 50% strength, and its combat power stretched in a line that ran from PL SYCAMORE to PL TEAK, was unable to generate enough combat power to penetrate the brigade's defense with any sizable force. The 32nd GMRR penetrated PL TWINE with two tanks and twelve BMPs, but they were all acting independently; effective command and control was lost. The OPFOR had lost seven tanks, sixteen BMPs, and six BRDM-2s with AT-5s south of PL SYCAMORE to CAS and artillery. In total, to artillery and CAS, the 32 GMRR would lose:

1. 4 T72 and 6 T80 tanks
2. 31 BMPs
3. 6 BRDM-2s
4. 22 Artillery tubes (mixed calibers)
5. 75 dismounted infantry soldiers.¹¹⁹

Analysis

The success of 2nd Brigade during this mission must be viewed within the framework of the NTC. The NTC is a simulation. It is a very good simulation; as near to real as can be, but a simulation none the less. Some call what takes place at the NTC a wargame, though the use of "war game" is a poor choice for the operations which take place in the Mojave Desert. It is not a game nor will it ever completely reflect the nature of war. In actual combat, the full effect of Clausewitz's "friction of war" adds a dimension to the battlefield which cannot be captured at the NTC. Certainly there is friction, fog, and chaos at the NTC; both the regimental and brigade commanders experienced it in this particular battle. This uncertainty is but a small taste of what can actually be expected in war. The truly great simulations, like the NTC, can approach the level of war and realism that make the participants forget that it is only a simulation, but the NTC lacks the fullness of combat.

The strength of the NTC, and its usefulness as a setting for a case study, is the ability to model the battlefield and set the parameters for a particular battle or action. In this case, a brigade was given a very defined sector to defend, against a clearly defined enemy, and at a very specific time, though the fighting--the tactics, orders and finesse--is all free play. The OPFOR is free to adopt any course of action they wish, as is the BLUEFOR brigade. The choreography involves the conditions of the battlefield, force ratios, size of sectors and zones, etc. The playing field is leveled, so that it is the tactics and skill of the participants that decide the outcome, as

opposed to the roll of a dice as in a game. A defending brigade will never be attacked by a larger force that it can doctrinally defeat, though this could, of course, happen on actual battlefields. NTC is a simulation, but this very fact makes it acceptable for analysis with the integration triad.

Fires in Depth

The size of the sector for 2nd Brigade (45 km X 45 km) was significantly larger than that of either General Biryokov (4 km X 8 km) at Bobruisk, or General Giap at Dien Bien Phu (9 km X 16 km). Simultaneous engagement of an attacking enemy across his depth is much more complex in this environment than in the other two case studies. The 32nd GMRR conducted a forty kilometer approach march just to arrive at Task Force Infantry's engagement areas. The regiment (in the 1-2-1 formation) stretched over twenty-five kilometers from front to back. The brigade commander was faced with the daunting task of attacking the 32nd GMRR across its depth over these distances.

2nd brigade intended to continuously engage the enemy (southern MRB of the main body in particular) throughout its approach march. A series of engagement areas were planned along the avenues of approach. These engagement areas were designed to capitalized on different weapons systems ranges and munitions. The CAS engagement areas, WARTHOG, MAVERICK, and SWORD, in the south, and EAGLE, TALON, and HAWK in the north, were to be used sequentially by the brigade to engage the enemy with CAS. When the southern enemy battalion of the first echelon closed within range of the artillery battalions, the artillery and EW would begin attack of the battalion, as CAS would be shifted west on the

southern battalion of the 2nd echelon. Artillery and EW would continue the attack through EAs SWORD and either OMAHA, GOLD, JUNO, or UTAH. When the battalion reached PL SYCAMORE, Task Force Infantry would receive priority of fires, the brigade focus would once again shift to the west, as the task force used mortars and artillery in the close engagement areas.¹²⁰

The change in the 32nd GMRR's formation did not disrupt the brigade's effort to attack the regiment in depth. Both the forward detachment and the southern battalion of the main body were kept under withering fire during their entire approach march. One particularly effective sequence of fires took place from 0725 to 0740 hours. During this period, Task Force Infantry was engaging the forward detachment in EA JUNO with mortar fires, one artillery battalion (direct support) was engaging the southern MRB of the regimental main body in EA SWORD with destructive fires as well as smoke munitions. The other artillery battalion (reinforcing) was providing suppression of enemy air defense (SEAD) fires and was also attacking the 32nd GMRR's 2S1 artillery battalion. CAS was prepared to attack the trail of the MRB in EA HAWK upon the completion of the SEAD fires. Meanwhile, the Military Intelligence Company had acquired the southern MRB's command radio frequency and was jamming it. Throughout the depth of the 32d GMRR, the 2nd Brigade was simultaneously engaging, not every target, but the right targets to achieve a common endstate. The engagements, orchestrated not in distance, but in time, had a synergistic effect on the 32nd GMRR.

Detailed Yet Flexible Planning

Clausswitz wrote that war is composed of very simple things, but that in war, executing very simple things becomes extremely difficult. The fog and friction, together with the uncertainty of the environment and the uncooperative enemy all point to the need for clear guidance by the commander, well written orders by the staff, and thorough rehearsal and preparation by the unit. General Patton, an avid proponent of short, brief orders, also stressed the need for detailed preparation:

Sand table exercises for planning and rehearsals, even on the most rudimentary type of sand table, are vital preparations prior to action . . . Commanders must remember that the issuance of an order is only about five percent of the responsibility of command. The other ninety-five percent is to insure that the plan is planned to the proper detail and . . . that the order is carried out.¹²¹

The decision by the 2nd brigade commander to attack the southern MRB of the main body of the 32nd GMRR created a situation which demanded every bit of that 95 percent detailed planning and follow up. The location, identification, and attack of a specific moving force by a combination of artillery, CAS, and electronic warfare was not a small feat by any means. The correct acquisition assets had to observing the correct area at the correct time to acquire the southern MRB. Then the MRB had to be tracked and handed off to the executors of the fires, either TARP, COLT, ETAC, or EW. Then these various lethal and non lethal fires had to arrive at the right time: SEAD and marking rounds before CAS, smoke before jamming, and so on.

The 2nd brigade conducted detailed planning and rehearsals to ensure all aspects of the attack were coordinated. The brigade executive officer exercised quality control over the various annexes to

ensure all participants in the attack were sharing the commander's vision of the execution (Figure 29).

<u>Scheme of Maneuver</u> Focus air scouts (TARP) and COLTs to mass field artillery, CAS, EW, and artillery smoke on the southern most MRB culminating in EA SWORD to disrupt and attrit the southern most MRB and to cause the enemy to enter the main battle area one attritted MRB at a time. <u>Fire Support Annex</u> Focus FA/CAS on the southern MRB in EAS HAWK, EAGLE, WARTHOG . . . and delay and attrit the MRB in EA SWORD and confuse his C2, preventing the enemy from massing two MRBs on TF 2-16 at one time. <u>Engineer Annex</u> FASCAM target AN9000 south of the whale gap will delay the southern MRB to cause the enemy to piecemeal his attack into the close engagement. <u>Electronic Warfare Annex</u> ...Jam the southern MRB C2 to add to confusion in EA SWORD as smoke, FASCAM, DPICM arty, and CAS all hit him (S. MRB) at once. This will contribute to the delay and disruption of the southern MRB to force them (GMRR) to fight piecemeal to the north. <u>TARP platoon OPORD</u> ...after identifying the MRBs and flank security of the MRR, focus effort to direct CAS and artillery against the southern MRB of the two attacking on line to disrupt and delay to force the enemy to attack with one MRB at a time.
--

Figure 29. Comparison of Annexes for Continuity

Sources: Operations Order (OPORD) number 94-26, 18 May 94, Combat Training Center (CTC) Warrior Information Network (WIN), Ft. Leavenworth, KS, Paragraph 3a, Annexes E, G, H, J, V.

All critical elements in the brigade had meticulously planned the attack of the enemy southern battalion, down to the platoon operations ordered issued by the TARP platoon leader. This coordinated effort was verified during several multi-echeloned rehearsals, culminating with the brigade combined arms rehearsal at 1200 hours on May 18th.¹²²

Despite all of the detailed planning by the brigade, the enemy chose to attack on a secondary avenue, in a different formation than anticipated. The 32nd GMRR attacked in a 1-2-1 formation through avenue of approach S1E rather than with a 2-2 formation on S2E and S4E, yet 2nd brigade was able to quickly react to the change, and, with little

disruption to the battle tempo, used fires effectively in combination with maneuver to defeat them. 2nd brigade's plan, as detailed as it was, provided for flexibility to meet such a scenario.

An important element in the brigade OPORD was the synchronization matrix. The term "synchronization matrix" is probably a poor term based on the definitions in Chapter 1. A better term would be the integration matrix, but the intent is clear. The matrix is the recording, the memory aid, which reflects the results of the brigade's integration and coordination activities (wargaming, rehearsals, etc). The synchronization matrix is not a "one-stop shopping document" for the execution of the mission. It can never be that detailed. What the synchronization matrix does give is a listing of events, in general form, which should be taking place at a certain time, and, perhaps most importantly, links the decision support template (DST) to both enemy and friendly actions. This linkage, so seldom accomplished by many brigades, was thoroughly complete by 2nd brigade.¹²³ The result: 2nd brigade could anticipate the enemy's change in course of action and implement already developed plans to counter that action.

An examination of the synchronization matrix in the brigade operations order reveals two branch plans contained there: a branch plan if the 32nd GMRR attacked with an advance guard (1-2-1 formation), and a branch plan if the enemy attempted to attack through Red Pass. The regiment did not, of course, attack through Red Pass, but it did appear in the 1-2-1- formation. Tied to the column in the synchronization matrix that contained a 1-2-1 formation as the enemy action, were a series of brigade reactions that needed to take place.

An entire series of named areas of interest (NAIs), artillery and CAS targets, designated observers, and engagement areas had been developed for not only an attack in a different formation, but an attack down AAS1E. Flexibility was built into the plan. Detailed planning and solid rehearsals permitted not only smooth execution of the base plan, but also swift transition to branches as well.

Focused Targeting

The brigade target list contained 25 targets for the entire brigade sector. The targets were broken down:

- | | |
|--------------------------------------|---------------|
| 1. Base Plan | 8 Targets |
| 2. Valley of Death Branch | 5 Targets |
| 3. Red Pass Branch | 4 Targets |
| 4. Task Force Targets
(All Plans) | 5 Targets |
| 5. FASCAM Targets | 3 Targets 124 |

The base plan, a regimental attack along AAS2E and AAS4E, covering forty-five kilometers, included only thirteen targets (eight brigade, five task force). The plan was not to engage all the enemy across all the terrain, but to engage the right enemy in the right terrain. The right enemy was determined to be the southern MRB. The terrain chosen for the engagements maximized the effects of both artillery and CAS. EA SWORD, and the accompanying targets, was placed at a point where the terrain became very constricted at the Whale Gap. This terrain would slow the GMRR and force it to bunch together, a perfect target for both artillery and CAS; EA NORMANDY was placed at an enemy decision point-- attack towards Red Pass or turn north west towards the Siberian ridge.

The engagement of the southern battalion at this decision point would slow that decision, causing the battalion to fall further and further behind the other main body battalion.

During the brigade defense, twenty-six fire missions were fired south of PL SYCAMORE. Of these twenty-six missions, five were fired at enemy artillery, five were fired at the forward detachment battalion, twelve were fired at the southern MRB, and four were SEAD in support of CAS attacking either the FD or southern MRB.¹²⁵ No fires or CAS attacks beyond PL SYCAMORE were made on any enemy formation other than the formations the brigade commander had specified. None. This focus of fires, so often the bane of successful fires in operations, was conducted near perfectly. The brigade commander focused the staff on the targets, and the staff focused their planning and execution on attacking those targets.

Conclusion

The complete analysis of the third case study further cements two conclusions that were becoming apparent through the first two cases. First, the tenets of the integration triad, depth, detailed flexibility, and focus, are the correct measures of integrated fires and maneuver. All three cases clearly fit the framework of the triad. While each commander may have placed greater emphasis on one of the tenets, they all three were present in each operation, and all three demonstrated "value added" for the commander.

Second, it is also become obvious that there is something additional contributing to these commander's successes on the battlefield, something that cannot be measured by the integration triad.

The French historian Barbey d'Aurevilly once wrote that, "It is the spirit which wins battles and will always win them. Mechanical devices, precision weapons, all the thunderbolts invented by man and his sciences will never get the better of that."¹²⁶ The three commanders demonstrated this spirit. They realized their responsibilities to wield integrated fires and maneuver to achieve something more than depth, detail, or focus. The triad was not an endstate for the commanders, it was a tool. The endstate was something else entirely. It was something they visualized early, and worked towards, and is the focus of the conclusions for this thesis.

CHAPTER 7

CONCLUSIONS

The integration triad has proven to be a useful tool for analyzing integrated fires and maneuver. It served as an objective lens which allowed a careful and detailed study of the three selected case studies. The model focused the analysis of the case studies on the three key tenets of integrated fires and maneuver. This focus permits the conclusions drawn from the analysis to have a special relevancy. The model itself answers the question, what must be done to ensure integrated fires and maneuver? This is the science portion: depth, detailed flexibility, focus. These are the encompassing characteristics which broadly must be present to ensure integration. If they are missing, so is integration. Integration is clearly more than a process. It includes generous portions of art as well as science; the analysis of the case studies makes this clear. The conclusions drawn from the case studies can identify the commonalty in the art the three commander's exercised in order to integrate fires and maneuver.

The most compelling impression gained by a study of the case studies is that the three commanders were not successful in integrating fires and maneuver because of brilliant tactical decisions made under fire or because they could read the flow of the battle and apply firepower where it was decisive; their success was nothing so dramatic. They were successful because of their generalship before the fight. The

decisions, guidance, and vision they developed prior to the action were the decisive events in the battle. In essence, the commanders won the fight before a single shot was fired.

The commanders in the three case studies each had the ability to visualize the battlefield as he wanted it to be at the critical point in the battle and develop a series of actions which would shape the battlefield to this endstate. The definition of fires in Chapter 1 proposed thinking of fires as *condition setting events*. This condition is that mental picture the commanders had of the battlefield at the decisive point. For General Biryokov, it was his entire division attacking the isolated German Company 1; for General Giap, it was nullifying French firepower and mobility as the Vietminh attacked each isolated strong point in turn; for the 2nd Brigade commander at the NTC, it was Task Force Infantry facing one battalion at a time in their close engagement areas. Dissimilar conditions for dissimilar situations, but one linkage is common between them. Each of the three commanders recognized that all actions: fires, maneuver, electronic warfare jamming, etc., each contribute to attaining an effect on the enemy. They didn't fire, maneuver, or jam to win the battle; they did it to create a particular effect. This effect, in turn, was but one action in setting a condition at the decisive point (Figure 30). Effects are a compilation of tasks and conditions a compilation of effects.

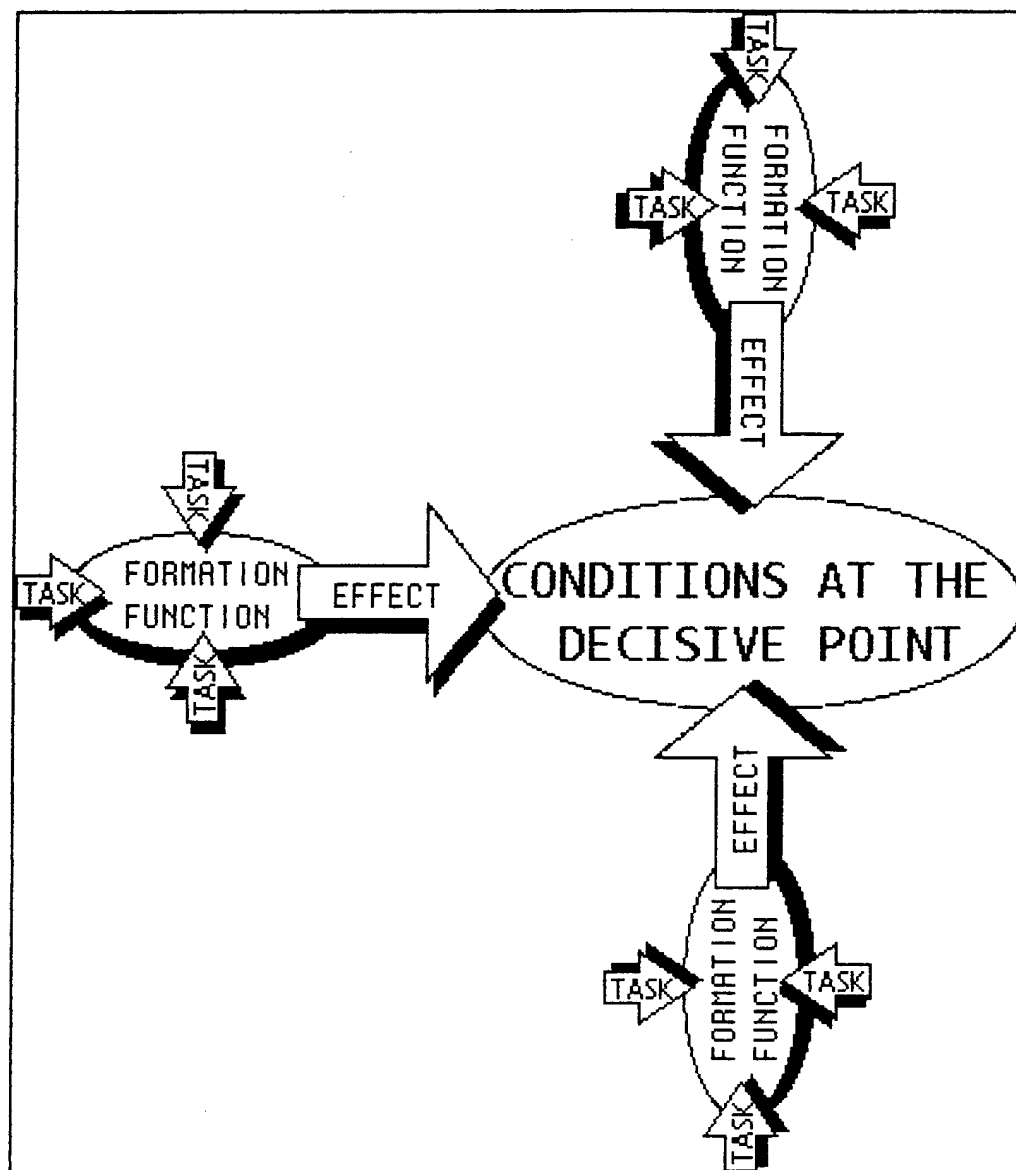


Figure 30. Setting the Conditions

Conditions

The notion of a commander articulating his vision of battlefield conditions at the decisive point is not so foreign an idea, but the practicality and implementation suffers today from inexact doctrinal language and a genuine absence of understanding of the concept. Commander's intent is the current doctrinal conduit through

which the commander influences the plan and adds his personal mastery of the art. Commander's intent is broadly described in FM 100-5 as the commander's statement of the purpose of the operation and a vision of the desired endstate.¹²⁷ It's stated purpose is to focus subordinates on the endstate of the operation. The endstate--the point at which the objective is secured, the counterattack completed, the mission accomplished--is the Holy Grail of military operations and it is where commanders are told to focus. Commanders are taught to develop mental images of the battlefield at the point when the action is completed, and herein is the first lesson to be learned from the commanders in the case studies: commanders should concentrate on developing their vision, not of the battlefield after the fight is won, but of the battlefield just before the fight is won, at the critical or decisive point.

A summary of fiscal year 1993-94 trends from the NTC comment on the utility of the commander's intent in guiding staffs to develop integrated plans:

1. The commander's intent was stated. It was placed on boards in the tactical operations center (TOC) when he issued it and was never looked at again . . . it had little relevance for the staff.
2. Unfortunately, the intent of the commander is seldom able to be translated into achievable functions by the staff. The commander's vision is not useful or shared by the staff.
3. The commanders must state in clear terms their vision of the fight; unclear intent results in the commander's vision not being considered.¹²⁸

It is not surprising that the commander's intent is often of little value to subordinates in formulating an integrated plan. The commander's vision is focused too far in the future--after the battle is won. Take, for instance, the example of commander's intent taught by the United States Army Command and General Staff School (CGSS):

2d Corps Commander's Intent:

PURPOSE: The purpose of this operation is to destroy the Iraqi II Corps forces in zone, protect the 21st Corps flank, seize OBJ TAYLOR, and establish blocking positions along the EUPHRATES River from SUD SHUYUKH to AL BASRAH.

METHOD: I intend to conduct a deception in the eastern part of zone to fix the enemy's attention while we mass our forces in the west to penetrate their defense. We will then conduct an envelopment of their forces in depth to complete their destruction.

ENDSTATE: At the conclusion of this operation, will have occupied OBJ TAYLOR and be in blocking positions along the EUPHRATES River, will have destroyed all the Iraqi forces in zone, and will have sufficient combat power forward to continue offensive operations into Iran or Iraq.¹²⁹

This powerful tool, the commander's vision of the operation, is being taught as little more than an anemic course of action statement. The endstate is basically a restatement of the purpose in the affirmative voice, and the method an outline of a scheme of maneuver. All of the years of schooling and acquired experience by the commander are put to use in this one sound bite that exhibits neither art nor science that does little for the staff than to frame their courses of action (deception in the east, attack the west, penetrate, envelop).

The current doctrinal concept of commander's vision is in stark contrast to the vision expressed by the 2nd Brigade Commander at the NTC. His vision was articulated by, first, what he saw as the decisive, or critical point on the battlefield (the 32nd GMRR in the close engagement areas [EAs]), and secondly, how he wanted the battlefield to appear at the decisive point (32nd GMRR in a column of battalions moving towards the EAs, RED PASS sealed). The endstate should be mentioned by the commander to define success, not to focus effort. The effort is focused at the critical point, where the battle will be won or lost. No battles are ever lost at the endstate.

The three case study commanders demonstrate that a more useful form of the current commander's intent might involve reorganizing the existing format (PURPOSE, METHOD, ENDSTATE) into a form which takes advantage of the commander's experience, allows him to apply the art of warfighting, and gives his subordinates a focus not on the end of the battle, but the part of the battle which is most critical to win. This new format would keep PURPOSE and ENDSTATE, as they define both the commander's interpretation of why the operation will be conducted, as well as his determination of the events which spell success. The format would replace METHOD, a particularly useless term, with DECISIVE POINT and CONDITIONS.

It is important to note that this definition of decisive point is very different from the current doctrinal definition. Currently, decisive points are defined as:

Points which provide commanders with a marked advantage over the enemy and greatly influence the outcome of an action. Decisive points are often geographical in nature, such as a hill, a town, or a base of operations . . . but can also be a command post, critical boundary, airspace, or communications node.¹³⁰

This definition treats decisive points as a mix between key terrain and high payoff targets, and views "decisive" as synonymous with "commanding" and "point" the same as "place". This view of decisive points enslaves the commander to the terrain, logically causing his thought process to center on affecting pieces of dirt (take a hill, block a valley, occupy a ridge line), rather than affecting the enemy (the true objective).

An alternative view suggested by the case studies treats decisive points as an events rather than a places. The decisive points

were different for each of the commanders (Biriyokov's isolation of Company 1, etc...), but the key concept is that the points were chosen by the commanders! Biriyokov could have chosen Company 2, or 3 or 9 to isolate and attack, it doesn't matter which. The important realization is that the choice was Biriyokov's. He, as well General Giap and the 2nd Brigade Commander, visualized a decisive point, foresaw the necessary conditions (both friendly and enemy) that existed across the battlefield at that decisive point, were able to articulate this vision, then set about to create those conditions.

Effects

The commander's critical function early in the development of the plan is the visualization of the decisive point and conditions that exist there. The next critical function demonstrated by the commanders in the case studies was their close interaction with their staffs in determining the effects necessary to create those conditions. Conditions are created by a combinations of effects, which are in turn, brought about by either one, or many, tasks. The effects are the desired outcomes of the tasks.

General Giap assigned many of his assets, both artillery and others, tasks associated with attack of the French Air Force. His light artillery was used to "snipe" at individual aircraft, the heavy artillery cratered the runway and destroyed the control tower, and saboteurs infiltrated the compound and contaminated fuel and destroyed planes on the ground. The effect Giap desired was not the destruction of the French Air Force at Dien Bien Phu, but the removal of the planes from Dien Bien Phu to air bases near Hanoi, 220 miles to the east.

Since much of the French Air Force in northern Indochina was comprised of smaller fighter bombers, these aircraft would be operating at the extreme limits of their range if they were forced to fly from Hanoi.¹³¹ In addition, with the airstrip rendered unusable, resupply of the French garrison would have to be made by parachute drop, a very ineffective method. In fact, it is estimated that half of all supplies dropped by the French actually fell on Viet Minh positions.¹³² Thus, the individual tasks of firing artillery and sabotaging fuel collectively produced a greater effect: disruption of French air support to the garrison. This effect, in turn, contributed to the condition General Giap was trying to achieve: his divisions attacking a French garrison, completely cut off and without its fire support. "And the elephant will die from exhaustion and loss of blood."¹³³

The lessons of effects from the three case studies can be easily incorporated into the current decision making process most units follow today. The previous pages have already concluded that commander's intent must be expanded to include decisive point and conditions. The next recommendation concerns commanders guidance, and fits nicely with the new definition of commander's intent.

The case studies provided excellent examples of commanders who think beyond the physical mechanics of fire support as a means to accomplish an end (dropping bombs and firing artillery to kill the enemy). Their success in integration demonstrates that commanders must see the application of their fires in a systematic fashion--by viewing each fire support task according to the principles of FORMATION, FUNCTION, and EFFECT. The grouping of these three principles, while not

existing formally in past or present doctrine, represent a commonalty between the three studied commanders in their efforts to set the conditions they envisioned at the decisive point.

FORMATION is nothing more than the specific enemy to be attacked. It may be anything, from a battalion, as was the case with the 2nd Brigade at the NTC, to individual aircraft or command posts in General Giap's case. Specificity is important and current doctrine provides the useful concept of high payoff targets (HPTs) to aid the commander and staff. Many factors go into determining whether an enemy formation is a high payoff target, but the bottom line is, if achieving an effect on the formation is necessary to set the conditions envisioned by the commander, then it is a high payoff target. The attack of an HPT in and of itself won't achieve victory. It is simply one of many events that lead to victory. For example, in the third case study the defending 2nd Brigade staff identified the 32nd GMRR's engineers (obstacle breaching assets) as an HPT. If the 2nd Brigade engaged and destroyed all of the engineers before they breached, have they won? No, certainly not. There are other ways to get past an obstacle: mine plow tanks or bypass. But what they have done is taken away the OPFOR's primary and quickest breaching asset. The 32nd GMRR must now stop and expend additional time to get past the obstacle, all the while sitting in Task Force Infantry's engagement area, exposed to their fires. HPTs are a means to an end. A series of steps that each must be accomplished.

FUNCTION is the action that the enemy HPT (FORMATION) may take that the commander finds unacceptable and therefore must be altered.

For General Giap, it included the French Air Force attacking his artillery and French command posts directing reinforcements to blunt his attacks; General Biryokov saw the German Company 5 movement to bolster the center of the first echelon battalion position as unacceptable, while the 2nd Brigade commander saw the main body of the 32nd GMRR entering Task Force Infantry's engagement areas with two battalions abreast as unacceptable. The sum of all the enemy FUNCTIONS that are altered across the battlefield equal the condition the commander is trying to set.

EFFECT is the most important principle of the three because it is the logical culmination of the analysis of FORMATION and FUNCTION and, once determined, will dictate the fire support task that will be given to the fire support system. Current doctrine contains three fairly useful terms to describe EFFECT, though the definitions contained in FM 6-20-10, The Targeting Process, are too vague and do not reflect the complete usage of the concept of EFFECT by the commanders in the case studies. The three EFFECTs, Disrupt, Delay, and Limit, must be refined somewhat to mirror the concepts as applied in the case studies. It is useful for the commander to speak in these refined terms of Disrupt, Delay, or Limit. Disrupt: Efforts to interdict a function or action that the enemy will attempt to accomplish in order to prevent the enemy from carrying out this function *in the method* he intends. For example, General Giap could not prevent the French Air Force from resupplying Dien Bien Phu, but he could prevent them from landing to do it. Delay: Efforts to interdict a function that the enemy will attempt to accomplish in order to cause it to *happen later* than the enemy

desires. The 2nd Brigade Commander could not destroy one of the two battalions in the main body of the 32nd GMRR to prevent them from attacking abreast, but he could slow one of them down Limit: Efforts to interdict a function that the enemy will attempt to accomplish in order to prevent it from happening **where** the enemy wants it to happen. General Biryokov did not want the German Company 5 to reposition to a position where it could fire in support of Company 1, so he denied Company 5 an advantageous position by firing on it. Company 5 tried to move there, and was pinned down by the fires.

Though these terms were obviously not used by the commanders in the case studies, the concepts were. The notion of the commander choosing a decisive point, visualizing the conditions at that point, then planning to achieve effects that would set that condition was common throughout each of the case studies. The relationship can be illustrated by selecting a small portion of General Biryokov's plan as an example (Figure 31).

TASKS	CONDITIONS	EFFECTS
	FORMATION / FUNCTION	
Destroy 50% of Co. 9 with artillery	Disrupt Co. 9 from reinforcing Co. 1	242nd/246th Rifle Regiments mass on an isolated Company 1.
Position 242 Inf across from Co. 2 Fire smoke between Cos. 2 and 3	Delay repositioning of Co. 3 by 40 minutes.	
Destroy 70% of Co. 2 with artillery in the preparation	Disrupt enemy's ability to fire on 242 Inf. while they are crossing Berezina.	
Smoke forward of Co. 5	Limit Co. 5's ability to reposition to support Co. 1	

Figure 31. Recommendations Applied to Bobruisk Case Study

This type of methodology gives clear direction to the commander's staff in planning by addressing the enemy's formation and function the commander finds unacceptable (Company 3 repositioning, enemy firing on the 242nd Rifle Regiment during the assault, etc.), and the effect the commander wants on that function (Disrupt, Delay, Limit). The staff then can take that guidance and formulate plans (courses of action) to accomplish the guidance. These courses of action are refined and synchronized during wargaming. The end result is a concept of the operation (scheme of maneuver), and a concept for fire support (scheme of fire support). The burden is on the staff to determine the necessary

system(s) (each with a time, place, and purpose) to place on the enemy formation, and whose cumulative effort will achieve the desired effect (Disrupt, Delay, Limit) and set the conditions envisioned by the commander (commander's intent). It is during the wargaming that the staff determines which and how many enemy systems must be attacked with maneuver, lethal, and non lethal fires to either disrupt, delay, or limit that enemy system's function on the battlefield.

Conclusion

The Art of War has no traffic with rules . . . it follows then that the leader who would become a competent tactician must first close his mind to the alluring formula that well meaning people offer in the name of victory. To master his difficult art he must learn to cut to the heart of a situation, recognize its decisive elements, and base his course of action on these.¹³⁴

Chapter 1 of this thesis offered a new definition of integration. Integration was defined as joining the elements of combat power with other combat functions so that at any time each individual piece is functioning in concert with the others and is accomplishing the best designed task which, at any moment in time is setting a condition for success of the overall operation. As the process of research and analysis went by, it seemed that what Marshal Tukhachevskii wrote in the 1936 Soviet Field Service Regulations, PU-36, put the definition in far simpler terms:

The employment artillery [fires] in battle should be based on analysis of its characteristics and strengths and a careful determination of *what needs to be done at the time* . . . only then will the two arms [infantry and artillery] be working under conditions affording the best possible cooperation [integration] (*italics mine*).¹³⁵

Tukhachevskii's concept of doing what needs to be done at the time is a powerful metaphor describing the model and process developed in this thesis. Integrated fires and maneuver does not demand a

commander have the vision or acumen of a Tukhachevskii or Guderian; he only need possess a knowledge of the science and appreciation of the art involved. The science is described in the integration triad and is a valuable tool in forming an integrated fire support plan. The complementary function of command, applying the art of war, is Tukhachevskii's focus, and is Colonel George C. Marshall's caution at the beginning of this chapter. Application of the art is the key to integration; a commander's determination of the decisive point and visualization of the conditions that must exist at that point will spell success or failure for his unit.

Further Study

The research material for this study spanned an significant breadth of time, theory, and opinions. Throughout the process, a disturbing hunch began to develop about other sources of difficulty in the integration of fires and maneuver. The notion is disturbing because, though the evidence and conclusions drawn in this study are convincing, there may be other forces at work which will derail a commander's best efforts at integration.

In 1941, Ferdinand Miksche wrote that an artillery officer:

Devotes his attention far more to the technical aspects of planning artillery than to the tactical needs of the infantry, of which he has little understanding.¹³⁶

This situation seems to be a recurring throughout much of the last century. Even today, the fire support positions within an artillery battalion--the company, battalion, and brigade fire support officers--are filled by the junior lieutenants, captains, and majors in the organization, often with little experience in fire support.

General George C. Marshall wrote,

In our problems we have adopted a liaison technique which permits infantry-artillery teamwork, but does not insure it. Mere physical and intellectual liaison between these two arms is not enough; there must be moral liaison as well. The infantry must know and trust the artillery; the artillery must know and trust the infantry.¹³⁷

It would most certainly be of great benefit, not to mention interest, to conduct a study examining the degree of "moral liaison" between the artillery officer and his supported maneuver brothers.

The limited time available in conducting this research forced exclusion of all echelons except for Brigade and Division. While the integration triad may be useful for these two echelons, it is not clear whether it would be useful at the maneuver battalion. A battalion may sometimes be organized with additional fire support assets, but generally a battalion does not fight true combined arms operations. A battalion commander still has the task to integrate fires and maneuver, though the framework of depth, detailed flexibility, and focus may have to be revised or changed entirely to meet his needs. A comparison of integration techniques between the brigade and battalion would certainly be a valuable area of additional study.

As the Army prepares to enter the 21st Century, significant organizational changes are being implemented in the force in the field. Advances in technology have produced fire support weapons of increased lethality and a battlefield that is growing "virtually" smaller as the maneuver commanders are achieving increased situational awareness. These changes in technology will surely inspire new doctrines and tactics; doctrine that will seek to capitalize on the increased information available to U.S. commanders, their ability to leverage it, and the tremendous potential of indirect fire precision munitions.

Richard Stimpkin completes his examination of Mikhail Tukhachevskii's deep battle theory (Deep Battle, the Brainchild of Marshal Tukhachevskii) with the conclusion that the visions Tukhachevskii had in 1936 are becoming a reality today. Stimpkin writes that the technological advances in artillery precision and lethality have made possible Tukhachevskii's theory of the interchangeability of the effects of the artillery shell and the bayonet; they both are now capable of destroying the enemy, though the artillery can do it a far greater ranges, and at less cost in lives.

The next logical step to Stimpkin's conclusion is the concept of maneuver by fire, that is, positioning maneuver forces across the depth of the battlefield to act as the "eyes" to initiate indirect fires (or airstrikes) on the enemy. Stimpkin calls this concept the "static mobile force", in which the application of fires place the enemy in a position of disadvantage without track or boot stirring.¹³⁸ Stimpkin envisions maneuver warfare being conducted with,

The physical movement of troops being replaced by the electronic conveyance of images, data and commands along the path from transmitter to receiver, and then by trajectory traced out by projectiles.¹³⁹

It seems that Tukhachevskii may have written a blueprint for 21st Century warfighting doctrine. A study of the applicability of his deep battle theory to future doctrine may result in considerable insight as to the face of future maneuver warfare.

ENDNOTES

Chapter 1

¹The dialogue concerning maneuver warfare has been carried out ever since men have initiated war as an end. In the United States Army, the evolution of maneuver warfare from what Richard D. Hooker calls the level of casual observation to that of true theory has taken place only in the last 15 years. The German Army, on the other hand, spent the early to mid 1930s refining the maneuver tactics that had been "tradition" since the time of Frederick the Great.

²This is, of course, a leading statement. While AirLand Battle did cause an increase in offensive dialogue (as compared to the swirling defensive maelstrom that was the Active Defense), AirLand Battle was not entirely maneuver warfare--an area that will be explored in detail during the thesis.

³Robert R. Leonhard, The Art of Maneuver: Maneuver Warfare Thought and AirLand Battle Doctrine (Novato, CA: Presido Press, 1991), 135.

⁴Richard D. Hooker, "Ten Myths About Maneuver Warfare," chap. in Maneuver Warfare: an Anthology (Novato, CA: Presido Press, 1993), 80.

⁵U.S. Army, FM 100-5, Operations (Washington: Department of the Army, 1993), 2-11.

⁶The combat functions as defined in FM 100-5, Operations, are: Intelligence, maneuver, fire support, air defense, mobility and survivability, logistics, and battle command. At the tactical level the combat functions are referred to as the Battlefield Operating Systems (BOS).

⁷FM 100-5, 2-10, 2-13.

⁸Joseph T. Palastra, "Train to Face an Unyielding, Unforgiving Enemy," The Field Artillery Journal (February 1989): 10.

⁹Bruce B. G. Clarke, "Improving the Effectiveness of Artillery at the NTC," The Field Artillery Journal (August 1991): 42.

¹⁰Wesley K. Clark, "NTC: The Ultimate Training Experience," The Field Artillery Journal (December 1991): 4.

¹¹Webster's New collegiate Dictionary, 1977 ed., s.v. "Maneuver."

¹²*Ibid.* ¹³FM 100-5, 2-13. ¹⁴*Ibid.*, 2-10. ¹⁵*Ibid.*, 2-8.

¹⁶*Ibid.*, 2-13. ¹⁷*Ibid.*, 2-8. ¹⁸*Ibid.*, 2-10. ¹⁹*Ibid.*, 2-8.

²⁰FM 100-5, 2-8.

Chapter 2

²¹James McDonough, "The Operational Art: Quo Vadis?," in Maneuver Warfare, - An Anthology, ed. Richard D. Hooker, Jr. (Novato, CA: The Presidio Press, 1993), 111.

²²Hooker, vii.

²³This comment is not intended to belittle or diminish the work done by these numerous authors. In fact, the intent is just the opposite. In review of submissions to professional journals, CTC lessons learned, and comments by the force in the field, it is painfully obvious that something is terribly wrong with fire support, particularly at the brigade level and below. That we as an army have allowed this to continue for so long is cause for the exclamation point!

²⁴U.S. Army, FM 6-20, Fire Support in the AirLand Battle, (Washington: Department of the Army, 1988), v.

Chapter 3

²⁵Lieutenant-General of the Artillery V. G. Fedorov, "On the Question of the Date of Artillery's Appearance in Russia" (Moscow: Academy of Artillery Sciences, 1989), 78, 132-33.

²⁶General Sir Robert Wilson, Remarks on the Character and Composition of the Russian Army and a Sketch of the Campaign in Poland in the Years 1806 and 1807 (London: Woolsey, 1810), 20.

²⁷The most commonly used munition against infantry was canister, which was simply a tin container fill with metal projectiles. It had a shotgun-like effect from the cannon's muzzle. It was very short ranged (about 350 yards), but devastating against massed formations in the open. Beyond this range, artillerymen used a variety of ammunition which had greater range, but less effect: solid shot, shell, or case. Solid shot was a metal cannon ball which achieved its effect by smashing through formations. It was not very effective because of the inaccuracy involved with aiming the cannons (and estimating range). Shell was the same as solid shot, except the ball was hollowed out and filled with explosive. The explosive was ignited by a burning time fuse. Case was shell, filled with small metal balls that increased the fragmentation effect. Both shell and case were very unreliable, again due to the inaccuracies involved with estimating range (which was important in determining how much time fuse to cut). Vardell Edwards Nesmith, Jr., "The Quiet Paradigm Change: The Evolution of the Field Artillery Doctrine of the United States Army, 1861-1905" (Ph.D. diss., Duke University, 1977), 13.

²⁸An example of this extreme range difference is the battle of Friedland on June 13, 1807. With the withdrawing Russians attempting to reorganize and counterattack, Napoleon ordered General Serrarmont, corps artillery commander in Marshal Victor's reserve corps, to bring his guns into action. Serrarmont rapidly moved the thirty-eight guns of his command forward, pouring fire into the Russians with tremendous effect.

Serrarmont bounded his batteries forward, closing to within sixty meters of the fleeing Russians! The effect of massed cannon fire from a range of sixty meters was devastating to the Russians. They could do nothing because the artillery pieces initially sat at the extreme effective range of their muskets. By time the cannons closed to sixty meters, the Russians were too disorganized and attritted to mount any type of effective fire. Philip J. Haythornthwaite, Napoleon's Military Machine (New York: Hippocrene Books, Inc, 1988), 123. This lesson was not lost on the Russians. In 1831, Lieutenant-General Nikolay Aleksandrovich Okunev published Memoranda on the Change which Artillery Used Correctly Will Produce on Modern Grand Tactics. This work would guide formulation of the Soviet strategy of fire superiority, as well as Soviet thinking on nuclear strategy. Chris Bellamy, Red God of War (New York: Brassey's Defence Publishers, 1986), 21-22.

²⁹Dennis Hart Mahan, An Elementary Treatise on Advance-Guard, Out-Post and Detachment Service of Troops, and the Manner of Posting and Handling Them in Presence of an Enemy (New York: John Wiley, 1853), 45-46.

³⁰J. F. C. Fuller, A Military History of the Western World, Vol. 3 (London: Minerva Press, 1967), 17.

³¹Artillery Tactics of the United States Army, Assimilated to the Tactics of Infantry and Cavalry (New York: D. Appleton and Company, 1874), 554.

³²J. B. A. Bailey, Field Artillery and Firepower (Oxford: The Military Press, 1989), 116.

³³Bellamy, 29-30. ³⁴Bailey, 119.

³⁵Valery Havard and John Van R. Hoff, Reports of Military Observers Attached to the Armies in Manchuria During the Russo-Japanese War (Washington, DC: Government Printing Office, 1906), 31.

³⁶F. O. Miksche, Attack - A Study of Blitzkrieg Tactics (New York: Random House, 1941), 8.

³⁷Major General F. W. Von Mellenthin, Panzer Battles (New York: Ballantine Books, 1956), xiv.

³⁸Actually, the phrase "deepening idea" is Richard Simpkin's. Tukhachevskii's term is tactical depth. Richard Simpkin, Deep Battle - The Brainchild of Marshal Tukhachevskii (New York: Brassey's defence Publishers, 1987), 35.

³⁹G. Isserson, "The development of the Theory of Soviet Operational Art in the 30s," Voennno-istoricheskii Zhurnal (Jan 1965): 36-46.

⁴⁰Miksche, 126. ⁴¹Bellamy, 44.

⁴²U.S. Army, FM 100-5, Operations (Washington: Department of the Army, 1993), 2-8.

⁴³Ibid., 2-7. ⁴⁴Simpkin, 37.

⁴⁵Ibid, 45. Also, L. Sapkov, Evolution of the Tactics and Military Employment of Artillery, Volume 4 (Moscow: Voenizdat, 1982), 65.

⁴⁶Len Deighton, Blitzkrieg - From the Rise of Hitler to the Fall of Dunkirk (New York: Ballantine Books, 1979), 152.

⁴⁷Richard D. Hooker, Jr. "Ten Myths about Maneuver Warfare," chap. in Maneuver Warfare: An Anthology, (Novato, CA: Presidio Press, 1993), 85

⁴⁸Bruce I. Gudmundsson, "Maneuver Warfare: The German Tradition," in Maneuver Warfare: An Anthology, ed Richard D. Hooker, Jr. (Novato, CA: Presidio Press, 1993), 273-293

⁴⁹William Lind, "The Theory and Practice of Maneuver Warfare," in Maneuver Warfare: An Anthology, (Novato, CA: Presidio Press, 1993), 7

⁵⁰Timothy T. Lupfer, The Dynamics of Doctrine: The Changes in German Tactical Doctrine During the First World War (Fort Leavenworth, KS: U.S. Army Command and General Staff College, 1981), 55

⁵¹Ibid., 42 ⁵²Ibid., 44-45.

⁵³U.S. Army, FM 101-5, Staff Planning Process (Washington: Department of the Army, 1984) 6-1

⁵⁴James K. Morningstar, "Thoughts on the Tactical Application of Maneuver Warfare," 1994(?), p. 7, Brigade Combat Trainers, National Training Center, Fort Irwin, CA.

⁵⁵Field Marshal Helmuth Graf von Moltke, Moltke On the Art of War, ed., Daniel J. Hughes (Novato, CA: Presidio Press, 1993), 184.

⁵⁶Morningstar, 9. ⁵⁷Ibid., 16. ⁵⁸Miksche, 171.

⁵⁹FM 100-5, 2-6. ⁶⁰Morningstar, 4.

⁶¹M. K. Tukhachevskii, Izbrannye Proizvedeniya (Selected Works) (Moscow: Voenizdat, 1964), 621.

⁶²Miksche, 171.

⁶³von Thome was obviously referring to offensive operations (Blitzkrieg), but understanding of the German "point of penetration" (Schwerpunkt) shows this to be equal to the current "main effort". B. Liddell Hart, The German Generals Talk (New York: William Morrow and Co., 1948), 95.

⁶⁴Miksche, 175-177.

⁶⁵U.S. Army, FM 6-20-10, The Targeting Process (Washington: Department of the Army, 1990), 1-1.

⁶⁶Lieutenant Colonel Zachariasen, current the Deputy Director of the Combined Arms Service Staff School (CAS³) is a member of my thesis

committee and made this comment during a committee discussion on the influence the commander exerts on the execution of the science of warfare, February 2, 1996.

Chapter 4

⁶⁷Major General F. W. Von Mellenthin, Panzer Battle (New York: Ballantine Books, 1956), 332.

⁶⁸West Point History Department, The Second World War: Europe and the Mediterranean, Vol 1 (West Point, NY: U.S. Military Academy, 1978), 278. Hereafter referred to as West Point Textbook.

⁶⁹P. H. Vigor, Soviet Blitzkrieg Theory (New York: St. Martin's Press, 1983), 149.

⁷⁰Marshal R. Ya. Malinovsky, Final (Moscow: Voenizdat, 1966), 218.

⁷¹Chris Bellamy, Red God of War (New York: Brassey's Defence Publishers, 1986), 58.

⁷²Mikhalkin, 181. ⁷³Bellamy, 67. ⁷⁴West Point Textbook, 279.

⁷⁵Guderian the Muese (1940), Patton the Rhine (1945).

⁷⁶Bailey, 218.

⁷⁷Though it would appear that the attackers would enjoy interior lines in this situation, the river presented a formidable obstacle to movement of Soviet men and supplies. So, though the attacker enjoyed a single axis and focused effort (space), the utilization of this axis took longer (time). Thus, interior lines may also be measured in relation to time.

⁷⁸The preferred frontage for a division in a breakthrough was about 2.8 km, but because of the width of the entire front in the theater, divisional frontages were extended. Vigor, 111.

⁷⁹David M. Glantz, Soviet Defensive Tactics at Kursk, July 1943 (Fort Leavenworth, KS: U.S. Army Command and General Staff College, 1986), 19.

⁸⁰A. I. Radzievsky, ed., Taktika v boevykh primerakh (polk) (Tactics by combat example (regiment)) (Moscow: Voenizdat, 1974), 118-220.

⁸¹Marshal of Artillery K. P. Kazakov, "Boyevoye primeneniye artillerii pri proryve oborony v Bobruiskoy operatsii (The Military Employment of Artillery in Breakthrough of the defense in the Bobruisk Operation)," Voyenno-istoricheskii zhurnal (VIZh) (Military Historical Journal) (Dec 1980): 18-24.

⁸²Ibid., 31.

⁸³West Point Textbook, 278, 281; Bellamy, 19, 58.

⁸⁴Richard Simpkin, Deep Battle - The Brainchild of Marshal Tukhachevskii (New York: Brassey's Defence Publishers, 1987), 89; M. K. Tukhachevskii, Izbrannye Proizvedeniya (Selected Works) (Moscow: Voenizdat, 1964), 621.

CHAPTER 5

⁸⁵Bernard B. Fall, Hell in a Very Small Place (New York: J. B. Lippincott Company, 1966), ix; Bruce H. Hupe, "The Generalship of General Henri E. Navarre During the Battle of Dien Bien Phu" (MMAS Thesis, U.S. Army Command and General Staff College, 1994), 33.

⁸⁶Hupe, 43; Jules Roy, The Battle of Dienbienphu, trans. Robert Baldick (New York: Harper and Row, 1965), 15.

⁸⁷Roy, 36-37.

⁸⁸Stephen L. Curtis, "Fire Support and the Maneuver Commander at Dien Bien Phu, Tragedy and Triumph," The Field Artillery Journal, (August 1990): 30-31.

⁸⁹Roy, 53-54. ⁹⁰Ibid.

⁹¹Phillip B. Davidson, Vietnam at War, The History: 1946-1975 (Novato CA: Presidio Press, 1988), 201.

⁹²The total number of guns will probably never be known. Roy says 20 105mm, 18 75mm, 80 57 mm, and 100 37 mm guns. Fall gives the number as 48 105mm, 48 75mm, and 120 guns of other sizes. The number used here comes from Curtis, 31, as is as reliable a number as any. Suffice it to say, Giap possessed approximately 200 guns of various caliber.

⁹³Hupe, 36; Fall, 115, 129. ⁹⁴Ibid., 64. ⁹⁵Roy, 166.

⁹⁶Ibid., 174. ⁹⁷Fall, 154. ⁹⁸Ibid., 154-155. ⁹⁹Ibid., 161.

¹⁰⁰Ibid., Ch VI and VII. ¹⁰¹Hupe, 75. ¹⁰²Roy, 289-290.

¹⁰³Fall, 453 ¹⁰⁴Roy, 166 ¹⁰⁵Ibid., 166; Curtis, 32.

¹⁰⁶Jean-Marie LeGall, "Dien Bien Phu Retold by Giap," Regards 62 (Feb 1955): 28.

¹⁰⁷Roy, 167. ¹⁰⁸Ibid., 155.

¹⁰⁹Vo Nguyen Giap, Dien Bien Phu (Hanoi: Foreign Languages Publishing House, 1964), 79-81.

¹¹⁰Roy, 187. ¹¹¹Ibid., xx.

¹¹²Sun Tzu, The Art of War, trans. Lo Shun-te (Tapei, Taiwan: Li Ming Publishing House, 1991), 81.

¹¹³The designations of units or names of individuals who participated in this rotation will not be identified in the case study

because these units are still active, and many individuals are still serving in the Army. Those who wish to study the case further can easily discover the necessary information through the CTC WIN or CALL at Fort Leavenworth, KS 66027. The rotation was rotation 94-08.

114During this mission at the National Training Center, I served as a Brigade Fire Support Trainer (OC) with the Brigade Training Team (BRONCOS), and observed the development and execution of 2nd Brigade's plan. Some of the information for this particular case study is based on my personal notes and recollection of the events as they occurred. These instances, when appropriate, will be referred to as "Personal notes/recollections".

115Operations Order (OPORD) number 94-26, 18 May 94, Para 3, Commander's Intent, Combat Training Center (CTC) Warrior Information Network (WIN), Ft. Leavenworth, KS. (Cited hereafter as OPORD 94-26).

116Ibid., Annex E (Fire Support), Commander's Intent for Fire Support.

117Richard Simpkin, Deep Battle - The Brainchild of Marshal Tukhachevskii (New York: Brassey's Defence Publishers, 1987), 187.

118The COLTs began engaging the enemy recon as it entered sector. By nightfall on the 17th of May, the COLTs had destroyed 2 BRDMs and 1 BMP, 60% of what was destroyed (the counter-reconnaissance company destroyed the rest). Fire Mission Log, Fire Support Trainers, Operations Group, Rotation 94-08, 18 May 94, CTC WIN, Ft. Leavenworth, KS. (Cited hereafter as Fire Mission Log).

119Fire Mission Log; CAS Mission Log, Division ALO, Operations Group, Rotation 94-08, 18 May 94, CTC WIN, Ft. Leavenworth, KS. (Cited hereafter as CAS Mission Log).

120OPORD 94-26, Paragraph 3a, Concept of the Operation, Annex E, Fire Support, Execution Matrix; Personal notes of Brigade Combined Arms Rehearsal.

121George S. Patton, Jr., War as I Knew It (Boston: Houghton Mifflin Company, 1947), 354-357.

122Personal notes of the event.

123Take Home Packet, Rotation 94-08, 18 May 94, Brigade Trainers, Fire Support, CTC WIN, Ft. Leavenworth, KS, V-3-1 to V-3-4.

124OPORD 94-26, Annex E, Target List Worksheet.

125Fire Mission Log, 1-7.

126Jules Roy, The Battle of DienBienPhu, trans. Robert Baldick (New York: Harper and Row, 1963), 288.

Chapter 7

¹²⁷U.S. Army, FM 100-5, Operations (Washington: Department of the Army, 1993), 6-6.

¹²⁸Take Home Packets, Rotation 93-08, 8 May 93, Brigade Trainers, Fire Support, CTC WIN, Ft. Leavenworth, KS, II-F-11, I-8; Rotation 93-09, Jun 93, Brigade Trainers, Fire Support, CTC WIN, Ft. Leavenworth, KS, II-C-8; Rotation 93-11, Nov 93, Brigade Trainers, Fire Support, CTC WIN, Ft. Leavenworth, KS, II-B-9.

¹²⁹U.S. Army, ST 101-5, Command and Staff Decision Process (Ft. Leavenworth, KS: Center for Army Tactics, 1995), 2-6.

¹³⁰FM 100-5, 6-7 to 6-8.

¹³¹Bruce H. Hupe, "The Generalship of General Henri E Navarre During the Battle of Dien Bien Phu" (MMAS thesis, U.S. Army Command and General Staff College, 1994), 47.

¹³²Henri Navarre, Agonie de L'Indochine, trans. William B. Cramer, Naval Intelligence Command, Reserve Translation Project (Paris: Plon, 1958), 122.

¹³³Jules Roy, The Battle of Dienbienphu, trans. Robert Baldick (New York: Harper and Row, 1965), 53.

¹³⁴The Infantry Journal, Infantry in Battle with a forward by George C. Marshall, (Washington DC: The Infantry Journal, 1939), 1.

¹³⁵M. K. Tukhachevskii, Izbrannye Proizvedeniya (Selected Works) (Moscow: Voenizdat, 1964), 621.

¹³⁶F. O. Miksche, Attack - A Study of Blitzkrieg Tactics (New York: Random House, 1941), 171.

¹³⁷Infantry in Battle, 250.

¹³⁸Richard Simpkin, Deep Battle - The Brainchild of Marshal Tukhachevskii (New York: Brassey's defence Publishers, 1987), 268-269.

¹³⁹*Ibid.*, 269.

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